Supreme Court of the United States,

OCTOBER TERM, 1886.

No. 120.

HARRIS EAMES,
Appellant,

vs.

WILLIAM D. ANDREWS, GEORGE H. ANDREWS and NELSON W. GREEN,
Appellees.

Appeal from the Circuit Court of the United States for the District of Connecticut.

BRIEF FOR APPELLEES.

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U. S. Supreme Court.

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HARRIS EAMES, Appellant, v. WILLIAM D. ANDREWS, GEORGE H. ANDREWS and NELSON W. GREEN, Appellees.	*No. 120. Appeal from U. S. Circuit Court for the District of Connecticut.*

Brief for Appellees.

This is an appeal from a final decree of the Circuit Court of the United States for the District of Connecticut; that decree sustained the validity of what is generally known as The Green Driven Well Patent, Reissue No. 4,372.

That patent has been sustained, after vigorous contests, in the following cases:

1. Andrews *v.* Carman, Judge Benedict, 13 Blatch., 307.

2. Andrews *v.* Wright, Judges Dillon and Nelson, 13 O. G., 969.

3. Hine *v.* Wahl, Judge Gresham. No opinion.

4. Andrews *v.* Cross, Judge Blatchford, 8 Fed. Rep., 269.

5. Green *v.* French, Judge Nixon, 11 Fed. Rep., 591.

6. Andrews *v.* Creegan, Judge Wheeler, 7 Fed. Rep., 477.

7. Andrews *v.* Eames (this case), Judge Shipman, 15 Fed. Rep., 109.

The case of Hine *v.* Wahl was fully argued on appeal in this Court (No. 70, Oct. Term, 1882), and the patent *sustained* by a divided Court, no opinion being written. Of course, counsel who argued that appeal, for the patent, cannot know the point on which the Court divided, but they have always believed that it was because of a defective record, not entirely clear on the question of *infringement.*

8. The patent was also construed and sustained in concurrence with the opinions of Judges Benedict and Blatchford, by Judge McCrary in the case of Andrews *v.* Long, 12 Fed. Rep., 871, but the bill was dismissed because of non-infringement.

9, 10. In the case of Andrews *v.* Cone, and Andrews *v.* Hovey, (16 Fed. Rep., 387), the patent was defeated; Judges Love and Shiras; in those cases Judge Nelson filed a dissenting opinion sustaining the patent; the defendants' proofs in these cases were substantially identical with the proofs considered and overruled in several of the earlier cases. Andrews *v.* Hovey, and Andrews *v.* Cone are now on appeal in this Court, Nos. 196–440.

The cases of Green *v.* French, and 10 other cases tried together, and appealed to this Court, were dismissed, last term, upon stipulation, the defendants settling the decree below. A few days ago the same action was taken in the case of Andrews *v.* Creegan, all these cases having been appealed by defendants below.

The answer sets up 28 patents alleged to anticipate the patent in suit; also, 53 prior printed publications; also, 222 persons are named who are alleged to have had prior knowledge.

But 2 of these prior patents (Goode's and Suggett's) are in evidence; extracts from 17 only of the prior

publications are in evidence; and *not one* of the 222 persons was examined as a witness.

The only defenses urged at the trial below were:

1. Non-infringement.

2. Prior publication and patent.

3. The reissue question—expansion and delay.

In the previous cases (as appears by the opinions of the several courts), many other defenses were made and overruled, and many witnesses were examined to show abandonment, prior public use in this country, etc. This defendant apparently deemed these defenses futile, and did not support them by proofs.

The only *errors assigned* in the decree are:

1. That the decree held that defendant had infringed.

2. That the reissue was valid (Appellants' Brief, 2).

It will be convenient to consider the case in the following order:

I. The invention.

II. The patent, and its construction.

III. Infringement.

IV. Prior patents and printed publications.

V. *Laches* in bringing suit.

VI. The reissue question.

I.

The Invention.

Before the invention of Col. N. W. Green, the grantee of the patent in suit, "wells" were made in two ways. The most usual was the "dug well," which was a mere *pit* dug into the earth to such a depth that water rose into its bottom to a height equal to the level of the water in the surrounding earth. Such wells were usually walled up with stone, brick, boards, or otherwise, and were most usually about three feet in diameter for domestic uses. The *force of gravity only* caused the water to flow into these wells. The water from such a well was removed by buckets or other simple lifting device, or by a pump, the pipe or "stock" of which was very much smaller than the diameter of the well pit, and which extended below the surface of the water. When the pump was operated, a *vacuum* was created in the pipe, and the pressure of the air on the *surface* of the water in the well pit *outside* of and around the pipe caused the water *in* the well to rush into the *vacuum* in the pipe, and follow the piston to the point of delivery.

In such a well, the action of the pump at each stroke merely lifted a portion of the water contained in the bottom of the well pit, but exerted no power towards compelling any water in the surrounding earth to enter the well pit; the pump acted on that water only, which at the time of each pump stroke was actually contained within the well pit itself.

Wells thus made have been known since prehistoric times; pumps thus operating in such wells, since the days of Archimedes.

The other kind of "wells," though different in the manner of making, were identical in operation when made, except when they were flowing wells. These were commonly called "artesian wells;" and they were made by *drilling* or *boring* (instead of excavating with pick and shovel) to the desired depth. Usually this drilling or boring went to

hundreds or thousands of feet through rock, clay, sand, and many different strata until the water *flowed* out at the top of the well.

In these wells (just as in the older *dug* wells) the "material" which had occupied the pit thus made, was removed, or *excavated;* the main difference being that, instead of pick and shovel to break up or comminute, and remove the "material" (rock, earth, etc.), as used in making a dug well, the "material" was broken up, by "drills," "augers," "borers," and other like tools, and was removed or excavated by means of *buckets*, sand pumps, etc. These artesian wells were commonly lined with a metallic tubing usually six inches or more in diameter. Sometimes the rock through which such a well was drilled or bored, was so close grained that the *lining* of metal or wood could be omitted. Sometimes *gravity* from an elevated head of water, would force the water up out of the top of the well pit thus made, and result in a "flowing well." But when the water did not flow a pump would be attached to a suction pipe extending down into this artesian well pit in the same manner as in a dug well and draw out, stroke by stroke, a certain portion of the water which had been forced by gravity into the well pit. The pump had no effect upon compelling the water to enter the well pit; it merely drew out that which had previously entered.

Wells, or methods of getting water from the earth, by these means, had invariably these characteristics:

1. The earth, rock, etc., was *excavated*, or removed *upwards*.

2. The water entered the well-pit by mere force of gravity.

3. When all the water within the well pit within reach of the vacuum was removed, as by rapid pumping, the pump ceased to deliver water until

gravity had time to force in enough more water to respond to its action.

4. The suction tube was carried down *within* the well pit; and was *not itself* the "well pit."

5. Between the pump tube and the walls of the well pit there was always, and necessarily, space for air to pass down and press upon the surface of the water in the well pit.

Colonel Green discovered that

1. *Excavation* was not needed.

2. That a "well-pit" was not needed.

3. That the *pump tube itself* would take the place of a well-pit.

4. That instead of *excavating*, a better well could be made by *puncture*.

5. That when made by *puncture*, the pump-tube was put into close *contact* with the water-bearing stratum of the earth.

6. That the effect of such close contact *between the water bearing stratum and the pump tube* was to dispense with any independent reservoir or well-pit (as was necessary in all previous wells), substituting therefor the entire water bearing stratum with which the openings were in direct contact and compelling a supply, so long as any water was contained in the entire stratum above the level of the openings into this tube, thus furnishing not only a cheaper well, but a better and practically inexhaustible supply of filtrated water beyond the reach of surface contaminations.

Whether or not Colonel Green fully understood the "*philosophy*" *or scientific principle*, involved in the construction or operation of his invention and discovery, is wholly immaterial. He certainly invented, described and patented the invention de-

scribed; and aftercomers have studied and explained the scientific *rationale* of its operation.

The only expert in the art of making pumps and wells examined in the case states the philosophy clearly (Rec., 62-64).

Cross-examination [of complainant's expert]:

"1xQ. (By Mr. Hamilton.) How many kinds of "wells are there?

"A. In general terms there are three kinds.

"2xQ. Name them?

"A. Open dug wells, walled, boarded or other- "wise lined; Artesian wells, drilled and bored and "usually lined, except in rock strata, and driven "wells, as set forth in the specifications of the Let- "ters Patent in suit.

"3xQ. How is a bored well made?

"A. Made by the use of drills, chisels, augers and "a great variety of auxiliary tools by which an open- "ing is made into earth down to water and the ma- "terial displaced taken to the surface; it is usual in "making Artesian bored wells to drive down a wood- "en or iron pipe, open at both ends, having a sharp "edge around the circumference of its lower extrem- "ity, which pipe is usually driven to rock, the earth "being taken out from within it; as the driving pro- "ceeds and after it reaches the rock, chisels, drills "&c., are used to disintegrate the rock which is taken "to the surface through the tube so driven.

"4xQ. Are they sometimes made by boring with "an auger or other instrument down to the water, "and then the tube driven down from the surface of "the ground?

"A. The accounts of making Artesian wells show "that in some instances *boxes* are driven down in "lieu of the tubes, but they are in effect, themselves "tubes; *but are not the tubes through which the "water rises to the surface of the ground;* a tube of "some kind being a necessity, to prevent the caving "in of the sides of the opening.

"5xQ. Is the tube always a necessity where the "boring does not terminate in rock or some hard "substance?

" A. It is, including clay or like material.

" 6xQ. Is the boring in some cases carried as far as " desired before the tube you have mentioned as " necessary is inserted or driven down ?

" A. Not to my knowledge; the use of the tube be- " ing to keep back the earth ; unless the walls of the " excavation were of rock, hard clay or similar mater- " ials, the boring could not be made to water with- " out the sides being in some way supported, and it " is usual, if not invariably the custom to drive " down open ended pipe to the rock as a commence- " ment.

" 7xQ. When this is done, is this pipe allowed to " remain as a lining for the well ?

" A. Usually it is; in former times it appears not " always to have been ; I have reference now to the " boxes described which are in reality tubes in a " square form.

" 8xQ. In your direct examination you speak in " reference to the Defendant's Exhibits, of boring, " and emphasize that expression; does it (boring) " necessarily in all cases mean a removal of earth " upwards ?

" A. It does in all cases I have read."

Re-direct-examination :

" 5Q. * * * Will you explain the difference " between the operation of these different kinds of " wells ?

" A. Water is supplied to open dug wells only by " the force of gravity, and when the water is pumped " from them by the ordinary suction pump, the " pressure of the atmosphere is the same on the sur- " face of the water in the well as it is upon the " water in the earth surrounding it, and the result " is that the water in the well itself, being in free " space, is more readily forced by the pressure of the " atmosphere into the suction pipe of the pump " than the surrounding water, which is retarded by " friction through the earth, and, in consequence, " the continued operation of the pump soon ex- " hausts the water in the well, which supply can

" only be replenished by the action of gravity; the
" pressure of the atmosphere to retard its flow into
" the well being equal to and counterbalancing the
" pressure exerted by the atmosphere upon the sur-
" face of the water in the earth, and the operation
" of the pump has no effect upon the water in the
" surrounding earth to force it into the well, hence
" the supply to the open dug well is due to and pro-
" duced only by the action of gravity."

"In the Artesian well, the same principle govern
" in regard to the means of supply, when they are
" not flowing wells; but in consequence of such wells
" being usually inserted down into rock or like sub-
" stance, until they meet with open fissures in the
" rock, through which water flows more freely and
" readily than it does through ordinary compacted
" earth, sand, etc., which form the water bearing
" strata above the rock, a much larger quantity of
" water is obtained therefrom, in proportion to their
" diameter, than is usually obtained from the dug
" well, unless, as in some cases, the dug wells are
" carried down into a rock stratum and strike a
" similar seam in the rock. When Artesian wells
" are flowing wells, the generally received opinion
" is——

(Objected to.)

" ——that their supply of water comes from a water
" bearing stratum, lying beneath a stratum practi-
" cally impervious to water, but which lower stratum
" extends beyond and crops out at the surface of
" the earth, at a greater or less distance from the
" well itself (often many miles away), and at a con-
" siderably higher elevation than the surface of the
" earth at the well.

"The distinguishing characteristic of a driven
" well, as it differs from the dug well, is, that when
" the pressure is relieved from the interior of the
" tube which itself forms the body of the well, not
" only does the force of gravity act to supply it with
" water directly from the earth, but there being no

" intervening body of water between the wall of the
" well itself and the earth surrounding it, upon
" which the atmosphere can act directly and with
" greater effect to force it into the well (as it can
" and does in the open well), the water is supplied
" directly to it, from the earth surrounding it, in a
" direct inverse ratio to its distance from the well;
" and the friction of the water through the earth be-
" ing directly as the square of its velocity, as the
" distance from the well increases, the water moves
" very much slower than it does immediately next
" to the well itself; but the area of the source of
" supply being increased exactly in the ratio of the
" square of its distance from the well, and the fric-
" tion being increased exactly as the square of the
" velocity (in any given stratum), the one exactly
" counterbalancing the other, it follows that, from
" natural laws, the surface of the water in the earth,
" surrounding the well, is and must be maintained
" practically at a given level; whereas, in the open
" well, supplied by gravity only, the water in the
" earth inclines from the natural surface of the
" stratum in the earth to the bottom of the well,
" the angle of that decline decreasing as the supply
" is taken from the well, and unless pumping is
" stopped, and time allowed for a re-supply, the
" lowering of the water in the earth extends to a
" continually increasing distance and a longer time
" is required to obtain the original quantity in the
" well; while the supply to the driven well is con-
" tinuous and steady, and practically inexhaustible,
" the supply in a given time being proportioned in
" any given soil to the size of the pipe forming the
" well, having openings proportionate to its size;
" different wells varying in the supply, according
" to the nature of the soil in which they are inser-
" ted, but remaining virtually constant at all times
" in the same soil; it is not claimed, nor is it a fact,
" that water can be pumped from a Driven Well, in
" any given stratum, with greater ease than from
" an open well sunk into the same stratum, but the

"great advantages are, that a much larger and "more extended supply of water is controlled, and "in consequence of the passage of the water through "the earth, under the pressure of the atmosphere, "a constant filtration is secured, thus securing "both a greater supply and better water; and "where large and continuous supplies are obtained "by unintermitted pumping, for days and weeks "at a time, experience has shown that the quan- "tity of water has gradually but perceptibly im- "proved, as in the case of the wells at Bellville, "heretofore mentioned, where an amount of water "is obtained largely exceeding the rain fall upon "the entire territory not shut out from the valley "by outcropping rocks upon three sides and open "to salt water upon the fourth, and no practical "diminution of the height of the water is observed.

"One peculiar characteristic of a Driven Well, "as distinguished from the bored Artesian Well, "is that the Driven Well is for use in soil where "no rock is to be penetrated, and where the pres- "sure of the atmosphere is free to act upon the "surface of the water in the earth surrounding it, "while the Artesian well is usually, if not always, "bored into a rock stratum, and is supplied with "water through fissures in the rock, instead of "through the earth itself surrounding the entrance "or opening to the well."

These facts warrant the appellees in claiming that Col. Green was the first to do three things:—

1. He was the first to *discover* the specific fact or principle *that if a pipe with an opening at the lower end be placed tightly in the earth, extending down air tight till it reaches into water, and having a pump attached, air tight to its upper end, and the pump being operated, tending to produce a vacuum in the pipe, water will flow freely through the earth into the pipe, abundantly and continuously supplying the pipe and pump, and constituting a practical and productive well.*

He also *discovered* the supplemental fact or principle that such a well would yield *more* water continuously than the open well.

2. Col. Green, in addition to this *discovery* of the *principle*, actually produced an *apparatus* embodying and utilizing the said discovery; that *apparatus* being the assemblage, arrangement, and construction of parts commonly known as "a Driven Well." In other words, a "Driven Well" is an *apparatus* for procuring a supply of water from the earth, and *each unauthorized pump stroke of such an apparatus which yields water is an infringement.*

Considered as an *apparatus* the Green well involves the following combination and arrangement: 1, There must be a pipe in the earth; 2, the lower end of the pipe must be in the water bearing stratum, and be open wholly or partially; 3, that pipe must constitute the lining of the well; 4, on the upper end must be a pump; 5, the pump must be "applied" tightly to the pipe; 6, the pipe must be air tight at all places between the water stratum and the delivery of the pump.

3. In addition to the *discovery of the principle*, and the *construction of the apparatus*, Col. Green *invented a new mode or process*, whereby he cheaply *constructed the apparatus*, and *utilized the discovery*. And this process, which is purely mechanical, was a cheap and quick *mode* of *placing the tube in the earth;* that is, by *driving* or forcing the rod or *tube* into the earth by *puncture* instead of by drilling or excavation.

This mechanical method naturally led to the name *Driven Well*—and careless observers (many eminent counsel among them), supposed that *actual driving* was the *sole* thing *discovered* or *invented* by Col. Green, having been misled by the restrictive popular name adopted for convenience. If the invention had been originally styled "Green's Well," much misapprehension would have been avoided.

Viewing Col. Green in this light, he

1. *Discovered a principle.*
2. Described a process for utilizing that principle.
3. Described and used a means of performing the process which includes the use of equivalents; and therefore his patent should be held to be commensurate with the three things which are included in his great gift to the world—the Driven Well.

This Court will remember that during the argument of Wahl *v.* Hine, we illustrated the *principle* of Green's invention by an apparatus, placed in the corridor below:—as follows:

We procured a box about four feet in length, two feet in width, and three and a half feet in depth; into one end of the box was placed a cylinder of perforated brass, six inches in diameter, and nearly the depth of the box; we then filled the box to the depth of about 30 inches with sand, outside of and around the cylinder so placed (which was about six inches from one end of the box), filling the entire box, except the inside of the cylinder, to the depth named, with sand; the cylinder so placed represented an open well lined with perforated brass from top to bottom, so as to permit the water which was poured upon the sand until it was saturated and a small amount left standing on the surface of the sand, to enter the well through its entire surface from top to bottom. We then took two small hand pumps of precisely the same style and make, attached the working valve rod of each pump to a working lever equidistant from its center, which was pivoted to a stationary upright, and to each of the pumps we attached an iron tube of the same size, having each at its lower end a point—technically so called—six inches in length, made of perforated brass of the same character, size, and number of openings to the square inch as was the lining of the open well as described; in the bottom of each of these points, as described, was a metal point, fastened, and the upper end of each perforated point was attached to the lower ends of the

respective tubes, each pump tube and point being a perfect facsimile of the other; we then had these pumps attached to a single plank, through which their suction pipes passed downwards; we then inserted simultaneously the one tube into the open well, which was filled with water and contained no sand, and the other directly into the solid sand, at the same distance from the other end of the box as was the center of the open well from its end of the box; we then operated the pumps simultaneously, each having the same stroke and capacity; in about one minute all the water in the open well was pumped out, the water from both pumps being discharged back upon the sand, insuring a full supply to each well, according to its capacity; after emptying the open well, the pumps were continued in operation; the one having its pipe tightly inserted into the sand saturated with water, was continued in operation for several minutes without the least apparent diminution in the amount of water it delivered, while the pump in the open well did only deliver an occasional spoonful after the well had been first emptied, as before stated, in about one minute; the pumping was continued until the judge remarked that it had been long enough continued to show its inexhaustibility.

More fully to exemplify the principle that the atmospheric pressure forced the water directly from the sand into the vacuum formed in the tube inserted into the sand, and that the surrounding of the tube in the water bearing stratum by the earth compacted about it was the cause of the greater delivery obtained from a driven than from an open well, in consequence of the insertion of that tube into the earth; we then, without making any change whatever, either in the pumps, pipes, box or lining of the open well, filled the open well with sand, which was compacted tightly around the tube up to the level of the other sand in the box outside of this well; the only real difference then existing between the two pumps, pipes and wells, being that

the pipe in the open well was, while surrounded with the sand compacted against it, still further surrounded by the perforated brass, through which and from which the pump, with its pipe in that well had only received a supply, which, coupled with the amount of water standing in the well itself, supplied the pump for but one minute; we then again commenced operating the pumps, and the supply from each was continuous and equal; this operation was continued until the Court appeared to be satisfied that the filling up of the open well had increased its capacity, and made it equal in delivery to the first driven well.

It is neither needful nor convenient to repeat that illustration.

II.

The Patent and its Construction.

Appellees rely upon the construction given by Judges Blatchford, Benedict, McCrary, Shipman, and others.

The appellant, too, adopts the construction given by those judges (Appellants' Brief, p. 2).

Regarding the reasoning in support of that construction as cogent, we, for the sake of convenience, make quotations at some length.

Judge Benedict says: "This well *embodies an* "*idea not present in any other form*, namely, that "the water in the water bearing stratum of the "earth may, by the application of artificial power, "be forced to flow from the earth into the well pit, "with increased rapidity, so that a well pit only a "few inches in diameter, sunk to a moderate depth, "will afford an abundant supply of water and con- "stitute a practical and productive well."

"The characteristic difference between the driven "well and other forms is in the practical applica- "tion of this new idea."

"In previous forms the rapidity with which water "flows from the earth into the well pit is depend- "ent upon the natural forces as they happen to be "found operating upon the water lying in the "water bearing stratum to which the well pit is "sunk."

"The driven well adds artificial power, so applied "as to cause a great increase in the rapidity with "which water in the earth will flow from the earth "into the well pit. The foundation of this new "form of well is the discovery that if a pipe with "an opening at the lower end be driven into the "earth, extending down air tight until it reaches "water, and have a pump attached air tight to its "upper end, and a vacuum be created in the pipe so "fitted and connected with the water in the earth, "water will flow abundantly from the earth into "the pipe.

"*The novelty consists in making the well pit to* "*consist of the tube of a pump connected tightly* "*with the earth;* this is accomplished by driving "into the earth the tube to be used as a tube of a "pump and at the same time as the pit of the "well.

"This manner of inserting the tube renders it pos- "sible, by means of a pump attached to the tube "to create a vacuum in the pit of the well and at "the same time in the water bearing stratum of the "earth.

"The difference between the new process under "consideration and the old, is that the pressure of "the atmosphere, which in the ordinary well "operates at the sides and bottom of the well pit to "maintain an equally distributed atmospheric pres- "sure upon the water, whereby the flow of water "into the well pit is made dependent upon the forces "of gravity, in the new process is removed from "within the well pit, and ceases there to operate "against the inward flow of water, so that the pres- "sure of the atmosphere operates with its full "power to force the water in the earth from the

"earth into the well pit, and without any opposi-
"tion caused by meeting in its flow the pressure of
"the atmosphere at the sides or bottom of the pit.

"This process involves a new idea, which was put
"to practical use when the method was devised of
"fitting tightly in the earth, by the act of driving
"without removing the earth upwards, a tube open
"at both ends but otherwise air tight, and extend-
"ing down to a water bearing stratum, to which is
"attached a pump; a vacuum in the well pit, and
"at the same time in the water bearing stratum of
"the earth, being necessarily created by the opera-
"tion of a pump attached to a pipe so driven.

"The novelty of the process under consideration
"does not lie in a mechanical device for sinking the
"shaft or raising the water to the surface, but in the
"method whereby water, by the use of artificial
"power, is made to move with increased rapidity
"from the earth into the shaft; whence it results,
"that a tube but a few inches in diameter, driven
"down tightly to a water bearing stratum of the
"earth, affords an abundant supply of water to a
"pump attached thereto, and constitutes a prac-
"tical and productive well.

"*Such an invention is without the field of me-*
"*chanical contrivance; it consists in the new ap-*
"*plication of a power of nature, by which new*
"*application a new and useful result is obtained.*

"There can be no patent for a principle; but, 'for
"'a principle so far embodied and connected with
"'corporeal substances as to be in a condition to
"'act and to produce effects in any trade, mystery,
"'or manual occupation, there may be a patent.'
"The idea or principle of forcing water from the
"earth into a well pit by the use of artificial power
"is new, but is not by itself patentable. The
"idea, when made available by a method whereby
"it is put to practical use, is patentable as a pro-
"cess and is thus secured to the person who has
"conceived the idea and invented the method.

"That method, in the present instance, consists in "accomplishing the result first conceived by the "inventor to be possible, by creating a vacuum in "the water bearing stratum of the earth and at the "same time in the well pit, by means of a tube pro- "jected into a water bearing stratum of the earth, "and connected tightly with the earth, to which "tube a pump is attached at the upper end.

"This constitutes 'a combination or arrangement "'of process to work out a new and useful result.' "It is 'a process combining instrumentalities before "'known, but not employed together, to accom- "'plish a new and useful result.'

"The elements of the process may be old, but "when combined for the purpose of putting to "practical use the *new idea of forcing water in this "way from the earth into a well pit*, they constitute "a new and useful process, within the meaning of "the patent laws."

"It thus appearing that the invention claimed by Green is found described in his specification, inasmuch as no violence will be done to the language of the claim by construing it to cover the invention, it is the clear duty of the Court so to construe it."

"If, by an examination of the specification and *applying it to the then existing state of the art*, we can learn what the invention was, then the claim, which was designed to be a condensed summary of the invention, is to be construed so as to be co-extensive with the invention, if that can be done without doing violence to its language." [Whipple *v.* Middlesex Co., 4 Fish. Pat. Cas., 42. See also Waterbury Brass Co. *v.* N. Y. Brass Co., 3 Fish Pat. Cas., 47. Leroy *v.* Tatham, 14 How., 181. Hawarth *v.* Hardcastle, 1 Webster's Patent Cases, 480. Turrill *v.* Railroad Co., 1 Wall., 491.]"

"So construed, this patent becomes co-extensive with the discovery, and secures an exclusive right to use the new idea or principle put to practical use by the new process described, for to use the language of the defendant's counsel (brief, page 27):

"If Green invented a process, it was not in fact dependent on the particular form of the instrument, nor does his specification so claim it."

"*The right secured by the patent is* not, then, the right to certain instruments, nor to a combination of instruments, but it is *the right to use his discovery in any method* presenting the characteristic features of his method, and *accomplishing the same result in substantially the same way.*"

"I therefore understand this patent to be a patent "for a process, and that the element of novelty in "this process consists in the driving of a tube tight-"ly into the earth, without removing the earth up-"wards, to serve as a well pit, and attaching there-"to a pump, which process puts to practical use the "new principle of forcing the water in the water "bearing strata of the earth from the earth into a "well-pit, by the use of artificial power applied to "create a vacuum in the manner described.

"In the present case, then, the well may be taken "to be a manufacture, and the claim of 'a process of "constructing wells,' like the claim for 'a manner "of constructing wheels,' will cover all wells con-"structed according to the process described, with-"out regard to form, and whether the parts taken "separately be new or old. [See Many *v.* Jagger, 1 "Blatch., 273. See also Goodyear *v.* Railroad, 3 "Wall., p. 356.]

"I consider the original patent to have been for a "process, as is the reissue, and that the process I "find described in the reissue is also to be found "described in the original patent.'

Judges Nelson and Dillon said:

"The two patents (the original and reissue) on "examination show that they were both granted for "'a process of constructing wells,' and the claim "and specifications describe the process, which con-"sists in driving a tube tightly into the earth until "it reaches a water bearing stratum without re-"moving the earth upwards, and attaching to this "well pit a pump, air tight, the tube being perfor-

"ated at the lower extremity and for a short dis-
"tance upwards to admit the water more freely to
"the inside. The reissue is not different from the
"original, and the claim does not include anything
"more than the patentee was entitled to.

"*It is a simple and cheap method of obtaining a*
"*supply of water, unknown untill Green's dis-*
"*covery, and the patent issued is for a process and*
"*not a result.* Although making a hole in the ground
"by driving a rod may be a part of the operation
"Green performs in obtaining a supply of water,
"his patent describes something more. Before his
"process this pit or hole could only be utilized as a
"well when by natural forces water flowed into the
"bottom, and a water bearing stratum must neces-
"sarily be reached, where these natural forces will
"cause a flow of water in such quantity that the pit
"becomes a reservoir, or produces a stream through
"the tube, as an Artesian well.

"Green, by driving a tube open at the lower end,
"as described, into the earth to a water bearing
"stratum, with the earth packed tight about it un-
"til the water is reached, and attaching to it a
"pump, air tight, constructs a well from which a
"supply of water is obtained when the pump is
"worked, and does not rely upon the ordinary
"operation of natural forces upon the water lying
"in the earth.

"The evidence shows that not only an abundant
"supply of water is thus obtained, but it is inex-
"haustible."

Judge Blatchford says, Andrews *v.* Cross: "The
"specification states that the instrument is to be
"driven down to water, and the earth it meets with
"is to be displaced by it and thus packed around
"it, and not removed upward from it; that the
"tube, which is either to be inserted in the place
"where the instrument has been driven down, after
"such instrument has been withdrawn, or is to be
"itself driven down in the first place, is to be air
"tight throughout its length, except at its bottom,

" where it has perforations to admit water; that " these perforations are made for the purpose " of obtaining a continuous flow of water; and " that, where the water does not flow out from the " top of the tube without the aid of a pump, a " pump is to be attached to the top of the tube by " an air tight connection. *The specification con-* " *templates the procuring of water. The process* " *seems to be divided into two stages—first, making* " *a hole for the tube down to water, by displacing* " *the earth by driving down a straight instrument* " *into the earth, so that the earth is packed around* " *the instrument; second, having in the hole thus* " *made an air tight tube, substantially as large as* " *the hole, with a pump attached to the top of the* " *tube by an air tight connection. The specifica-* " *tion does not otherwise explain the rationale of* " *the process which results in having the water* " *issue from the top of the tube.* When a rod " which is not a tube is driven down to water, " there is as yet no well. When the rod is with- " drawn, if the source of the water is higher than " the top of the hole, water will issue from the top, " and there is a well; and, when the air tight tube " is inserted in the hole, there is still a well. If the " rod is withdrawn and the air tight tube is insert- " ed, or, if such tube is driven in the first place, and " no water issues without the aid of a pump, there " is no well, in the sense of the specification, " till the pump is put on by an air tight connec- " tion, in such a way that, by the use of the pump, " the whole process can result in causing water to " issue from the farther upper end of what is so con- " nected with the top of the tube. *The construc-* " *tion of a well, spoken of in the specification* " *as the invention made, and which it must be* " *presumed was intended to be secured, is thus,* " NOT MERELY *the displacement of the earth by* " *driving down the instrument or the tube, but is,* " *in addition, having the air tight tube in the* " *earth with the earth packed around it, and a*

"*process arranged, by the mechanical aid of a* "*pump, attached by an air tight connection to the* "*tube, for causing the water to enter the perfora-* "*tions at the lower end of the tube and issue from* "*the upper end of the tube.* What particular "forces are in operation to produce this process of "obtaining water, when the well is not a flowing "well, is of no importance. The specification need "not explain. The mechanical means are fully "explained which result in the obtaining of the "water, from the commencement of the driving. "The process of obtaining the water comprehends "all the steps which form part of that process, as "they result from or attend the mechanical means "set forth. The process consists in having an air "tight tube with the earth tightly packed around "it, resulting from compacting the earth by dis-"placing it by driving a rod or the tube, and "having a pump attached at the top of the tube "by an air tight connection, and by the operation of "the pump, obtaining a supply of water at the top. "In describing how the invention is made and used, "so as to enable others to make and use it, the "description inclu les driving the rod, putting in "the air tight tube, and having the pump, and ob-"taining a continuous supply of water. The in-"vention being thus defined in the specification, "the claim is to be construed as broadly as the in-"vention, unless necessarily restricted by the lan-"guage used in the claim. The claim is: 'The "process of constructing wells by driving or forcing "an instrument into the ground until it is pro-"jected into the water, without removing the earth "upward, as it is in boring, substantially as de-"scribed.' Where the well is a flowing well, the "water will flow as soon as the hole is made, and "to make the hole by driving and displacement, "and insert the tube, and have the water flow, de-"velops the process. Where the well is not a "flowing well, the pump in addition is necessary, "and the use of the pump, in the well so made, is

"a use of the process. Driving or forcing an in-
"strument into the ground until it is projected into
"the water, without removing the earth upward as
"it is in boring, is an essential element in the pro-
"cess, in either case; and, where the well is not a
"flowing well, the claim is a claim to the process
"substantially as described, being the process above
"explained in case of a non-flowing well, an in-
"herent constituent of which is the driving process,
"the process claimed, however, including the other
"modes of operation which attend the procuring,
"by a pump, of water from a tube in a well so con-
"structed. In this view, where the well is a non-
"flowing well, the use, to procure water, of a pump
"in a well thus constructed and having its features,
"is a use of the process, although the person using
"the well and the pump and the process, may not
"be the person who caused the rod to be driven, or
"the hole to be made, or the tube to be inserted, or
"the pump to be attached. This reissued patent
"was under consideration in *Andrews* v. *Carman*
"(*13 Blatchf. C. C. R., 307*). In the decision of
"Judge Benedict in that case, the reissued patent
"was held to be valid; *the state of the art of con-*
"*structing wells at the time Green made his in-*
"*vention was explained;* the peculiar features of
"Green's driven well were commented on; the
"claim was held to be a claim to a process, the ele-
"ment of novelty in it consisting in driving a tube
"tightly into the earth, without removing the earth
"upwards, to serve as a well pit, and attaching
"thereto a pump, so that the process puts to prac-
"tical use the new principle of forcing the water in
"the water bearing stratum of the earth from the
"earth into a well pit, by the use of artificial power
"applied to create a vacuum in the water bearing
"strata of the earth, and at the same time in the
"well pit; *and it was also held, that the claim*
"*might well be construed as claiming the well as a*
"*manufacture constructed according to the process*
"*described.* The evidence in the present case shows

"that any person, by using a pump applied as "directed, on the tube as directed, in the well con- "structed as directed, will put to practical use "what is in *Andrews* v. *Carman* defined to be the "'new principle.' Although the specification does "not state what such new principle is, the evidence "in the present case shows what it is, and that it "is certainly and effectively developed, to the end "of obtaining a copious, continuous and unfailing "supply of good water, and that it is what is thus "set forth in *Andrews* v. *Carman*. It may be that "the inventor did not know what the scientific prin- "ciple was, or that, knowing it, he omitted, from "accident or design, to set it forth. That does not "vitiate the patent. He sets forth the process or "mode of operation which ends in the result, and "the means for working out the process or mode of "operation. The principle referred to is only "the why and the wherefore. That is not "required to be set forth. Under § 26 of the "Act of July 8th, 1870 (*16 U. S. Stat. at Large, "201*), under which this reissue was granted, "the specification contains a description of the "invention and of 'the manner and process "of making, constructing, compounding and using "it,' in such terms as to enable any person skilled "in the art to which it appertains, to make, con- "struct, compound and use it; and, even regarding "the case as one of a machine, the specification ex- "plains the principle of the machine, within the "meaning of that section, although the scientific or "physical principle on which the process acts, when "the pump is used with the air tight tube, is not ex- "plained. An inventor may be ignorant of the scien- "tific principle, or he may think he knows it, and "yet be uncertain, or he may be confident as to what "it is and others may think differently. All this is "immaterial, if, by the specification, the thing to be "done is so set forth that it can be reproduced.

"This reissue was also adjudicated upon by Judges "Dillon and Nelson, in *Andrews* v. *Wright* (13 *Off.*

"*Gaz. of Pat. Off.*, 969), and the claim was construed "to be for a process such as I have defined it to be.

"Under this construction, the defendant has in- "fringed by using a pump in a driven well con- "structed in a house hired by him, to obtain a sup- "ply of water for the use of his family, although he "may not have paid for driving the well or have "procured it to be driven. Such use of the well was "a use of the patented process.

"The invention of Green is shown to have pre- "ceded any invention made by Suggett and described "in his patent of March 29th, 1864. The evidence "also shows that none of the defenses set up in the "answer are established. The conclusions arrived "at in the decision in *Andrews* v. *Carman* are sup- "ported by the testimony in this case."

Judge McCrary says, *Andrews* v. *Long:*

"The evidence in this case clearly shows that the well constructed and operated by the respondents was made by *boring* a hole in the ground with an auger, somewhat *larger* than necessary, for the insertion of the pipe or tube, and by *putting* the tube down said hole to the water *without* driving or forcing."

"One of the necessary features of the invention, and perhaps the *principal* one, is the 'feature of a *tight connection*' between the tube and the earth, effected by the driving of the tube without removing the earth upward, upon the preservation of which (the 'tight connection') the success of the process depends—*Andrews* v. *Carman*."

"If the boring be resorted to merely for the purpose of *facilitating* the driving process—that is to say, if the hole bored be smaller than the tube to be driven in, so that the tube is, after all, driven or forced into the earth—so as to form a *tight connection* between the tube and the earth, the well thus constructed would, in my opinion, be within the terms of the patent; but if a well is sunk by digging or boring, so that the *excavation* is larger than

the tube to be inserted, and *nothing is done but to put a tube down into the excavation without driving*, and attach a pump, and in this way secure water, I am clearly of the opinion that such a process is not within the terms of the patent.

"I concur in the construction given to this patent by Judge Blatchford."

III.

Infringement.

Appellant devotes the larger part of his brief to enforcing the defense of non-infringement. This he does by the extravagant claim, in substance, that there cannot be an infringement unless the well is *wholly* made by *driving*; that if the upper crust of the earth be so hard as to need a drill, and the drill be used for a *part* of the way, and the *driving* be used for the other and lower parts, there is no infringement.

It is equal to saying that if I wish a well in my flagged sidewalk, and a stonecutter should drill or chip out a *hole through the flag*, and the tube be put-through this hole, and then be *driven* the rest of the way (as described in the patent), that such a well would be outside of the patent! Or that if I had an old dug well three feet across, which had gone dry, that it would not be an infringement, if I had a well *driven* (as described in the patent) in the *bottom* of that old dug well!!

Appellant's brief claims to print *all the testimony* as to infringement; in point of fact it omits the deposition of the appellant himself.

Clark says (Rec. 35):

"5 Q. Please describe fully and particularly the process used by you in constructing the defendant's wells.

A. First we bored with a *three-inch* auger down to water; then we coupled the pipe together with the well tube with the point on it, and then either *drove* it or *pressed* it down—I could not say which, I don't recollect—from *three* to *five* feet; probably about *four* feet, I could not recollect; we put on a Douglass pump; I could not say whether it was No. 1 or No. 2; we generally used No. 2 to it.

6 Q. Please describe the construction of the bottom part of the tube you used.

A. It was *one and a quarter inch pipe*, with quite a number of holes drilled from an inch from the threads, up two feet; the strainer was two feet long; then we lined it with fine wire cloth inside, and perforated brass inside of that.

7 Q. After *driving* or *pressing* the pipe, did you *remove any earth upward?*

A. *No, sir.*"

Judge Shipman says: "The defendant's two "wells were made by Frederick B. Platt and "Daniel Clark.

"Platt's testimony is as follows:

"6 Q. State fully and particularly the process "used by you in constructing these wells?

"A. We had a hollow auger that bored a hole "about *three inches* in *diameter*, with which we "bored the hole till we struck water; then we "coupled the pipe together, and either *drove* or "*pressed* the pipe into the water below the "strainer.

"7 Q. What do you mean by *driving* or *press-*"*ing* the pipe into the water below the strainer?

"A. I mean by *driving* the pipe *striking it* on "top *with a maul*, and by pressing it, we put a "chain on the pipe above, and used a lever with a "purchase to push it down; this was done *after* "the hole was bored.

"10 Q. How far did you ordinarily *drive* or "*press* the pipe?

"A. From *three* to *five* feet.

"11 Q. Into what did you drive or press the "pipe?

"A. *Into the wet sand.*

"20 Q. Describe fully and particularly the pro- "cess used by you in constructing these (the de- "fendant's) wells, specifying what difference there "was, if any, between them?

"A. I don't know as there was any difference "from what I have described; we bored a hole as I "said before, in the ground to the water, inserted "the pipe, and either *drove* or *pressed* the pipe "into the water from three to five feet, and at- "tached a pump to the top, a *pump constructed for* "*a Driven Well, I believe.*

"21 Q. What do you mean by into the water?

"A. The water *in the ground.*

"22 Q. You did not strike a solid body of water, "did you?

"A. I struck water enough to supply the pump; "that was all we was after, generally.

"23 Q. Do you *mean* by *into the water*, into the "*water bearing stratum* of the earth?

"A. *I suppose so.*

"24 Q. What was your object in *driving* or "*pressing the pipe* in the manner which you have "testified?

"A. To get a *supply* of water for the pump.

"25 Q. State whether or not a supply of water "was furnished for the pump *before* the *pressing* "or *driving* took place?

"A. *It was not.*

"29 Q. State whether or not, *after driving* or "pressing the pipes, as you have testified to, you "*removed* any earth *upward* in constructing these "wells?

"A. *No, sir.*

"The testimony of Clark is more brief, but to the "same effect.

"The defendant's counsel strenuously urge that "these wells were constructed by boring, that the

" wells were bored until water was struck, *that is*, " *until a supply of water was obtained*, and that " the wells were finished by pressing the pipes more " deeply into the source of supply, which had been " reached when the workmen 'struck water.' In " other words the defendant seeks to bring the case " within the decision of Judge McCrary in Andrews " *v.* Long, 12 Fed. Rep., 871."

" In this case, however, the witnesses, when they " used the common expression 'struck water,' did " not mean that they had reached an adequate " source of supply for a well, but that they had " reached a place *where the presence of water* " *manifested itself*, and where by continuous ex- " cavation an adequate supply would be obtained. " The wet sand or wet clay upon the auger showed " that water was at hand. The well was then fin- " ished and a supply of water was obtained by " pressing or driving a tube into the ground, with- " out removing the earth upward, and attaching " thereto a pump. When this was done, there was " put 'to practical use the new principle of forcing " ' the water in the water bearing strata of the " ' earth, from the earth into a well pit, by the use " ' of artificial power applied to create a vacuum in " ' the water bearing strata of the earth, and at the " ' same time in the well pit.'

Andrews *v.* Cross, 8 Fed. Rep., 269.

" A workman in our New England soil would not " ordinarily be able to drive or press a tube into the " stony or tough crust which must be penetrated " before water bearing strata are reached, but it is " no adequate argument against infringement that " it is necessary to bore or dig into the rough and " hard soil or the mass of tough clay, which lies " over the sources of water supply, *provided*, " *before a supply of water is reached, the patented* " *process is thereafter used for the purpose of ob-* " *taining an adequate flow of water upon the sur-* " *face of the ground.*"

The defense of non-infringement must be held to be frivolous.

IV.

Prior Patents and Publications.

Of the 28 prior patents named in the answer all are abandoned except two:

1. The Suggett patent, of March 29, 1864.
2. The Goode English patent of 1823.

1. The Suggett Patent.

There is no testimony in this case as to the date of the Suggett invention, or the Green invention.

But in Andrews *v.* Carman it was judicially determined (and is not controverted here), that Green's invention was made in the Fall of 1861, and there is no proof as to date of Suggett's invention except the date of his patent, 1864.

But, there was an elaborately contested interference between one Mudge and Suggett and Green; this interference was argued on appeal before Judge Fisher, in the Supreme Court, D. C.

The whole decision appears in the Record at p. 75. Judge Fisher held as follows:

"After a full and elaborate argument by counsel "for all the parties in this case, and an examina- "tion of the testimony, I fail to discover any good "reason for reversing the decision of the Commis- "sioner of Patents, 'awarding priority of inven- "tion to James Suggett *in regard* to what is "*claimed* by him in *this patent*,' and ordering a "patent also to Nelson W. Green in accordance "with the amendment filed by him September 14, "1867.

"I am clearly of opinion that Green first put into "practice the conception of making a driven well, "and is entitled, therefore, to his patent for the "*broad* claim of sinking wells by driving down the "*pump* or rod, without removing the earth upward; "and that *Suggett was entitled to a patent for the* "*perforated pipe and point* for sinking wells, and "I therefore affirm the decision of the Commis- "sioner."

An inspection of the Suggett patent (Rec., pp. 70-72) shows that the patent was for an instrument to be used in making *bored* wells. The *claim* is: "The perforated pipe *a*, with the pointed end *b*, constructed as a *drill*, and united with a pump, all substantially as shown and described."

No argument is needful to show that this *claim*, which was awarded by Judge Fisher, is a claim for a mechanical combination, a *tool* or "drill," as expressed in the claim.

While Green's claim was and is for a *process;* in practicing Green's process he might or might not use Suggett's specific mechanism; and Suggett might or might not use Green's process when he used his own mechanism, for the Suggett device was as capable of use in a dug well as in any other.

For the purposes of this appeal, Judge Fisher's decision in the interference case awarding Green the broad claim over Suggett, eliminates the Suggett patent as a defense; there being no proofs here as to their dates of invention.

2. The Goode Patent.

We adopt the views of the expert Andrews concerning this patent (Rec., p. 39), as follows:

"Exhibit No. 4."

"Being a copy of an English patent, granted to "John Goode, enrolled October 16th, 1823, de- "scribes numerous tools, appliances and appurten- "ances for making artesian wells, by drilling, bor- "ing and raising the earth and material from the "opening thus made, which forms the body of the "well, to the surface; the patent being, as stated "in the specification, for certain improvements in "tools or apparatus for boring the earth for the "purpose of obtaining and raising water.

"I do not find described in that patent either the "process, construction or mode of operation set "forth in the patent in suit; there is no description "given of any method of piercing the earth by a "simple puncture and forming an opening for the "body of the well, without removing the earth up- "wards; there is no description of a process for "obtaining water from the wells, by a method "utilizing the discovery of Col. Green, that, when "a tube which is air tight from its upper end down "to and into a water stratum, has a pump attached "to its upper end by an air tight connection and "operated in the usual manner, shall, by removing "the atmospheric pressure from the body of the "well, cause the water in the earth, by the pres- "sure of the atmosphere thereon through the "superincumbent earth, to flow directly from the "earth into the well, at a velocity due to such "pressure; and because I find no such description "in such patent, I say there is nothing therein con- "tained describing a well which, in its process, "construction or mode of operation, anticipates or "is like the invention described in the patent in "suit."

PRIOR PUBLICATIONS.

"Defendant's answer sets up a formidable list of "fifty-three different printed publications, Rec. p. "82. Sixteen of these are in evidence; concerning "none of them, nor concerning any of the patents,

" have the defendants examined any expert ; the " Court is left unaided to dig out of this vast " mass that which is or is not material. In the " Carman, French and Wright cases great stress " was attached to four printed publications ; that " in Ure's Dictionary ; that in McKenzie's 'Five " Thousand Receipts ;' that in the Report relating " to the Syracuse salt wells, and in Rees' Encyclo- " pædia, and these defenses were all overruled in " those cases, and should not further occupy the " time of this Court.

" We adopt the views of the expert Andrews " in regard to the printed publications 5-20 as fol- " lows :

Exhibit No. 5.

" An extract from the Repertory of Patented In- " ventions published in London in 1827, is in the " main a repetition of the specification of the patent " of John Goode, as described in the patent in " Exhibit No. 4, but appended thereto is the state- " ment that,

" 'The patentee mentions that tubes with valves " at their ends and containing pistons like figure 5, " moved by a cord, may be used for drawing it " (the water) up, but it is evident that the use of " these could be only temporary, as without pipes " of some kind the whole will soon fill up, and " when pipes were used, it is obvious that they " might be made to act as a pump, by being fur- " nished with pistons and valves.'

" Nothing contained in this exhibit changes the " opinion I have given in regard to the Goode patent, " or shows it to be in any respect like the descrip- " tion given in the patent in suit.

Exhibit No. 6.

"Is an extract from the Dictionary of Arts, "Manufacturers and Mines, by Andrew Ure, pub- "lished in New York City in 1847, by D. Appleton "& Co., at [page 63,]under[ ]the heading 'Artesian "Wells.'

"This is mainly in reference to the patent of "John Goode, as set forth in Exhibits Nos. 4 and 5, "coupled with the remark, that 'In the process of "boring, there does not appear to be anything new "proposed, but that[ ]these several tools are to be "employed[ ]for boring, packing and otherwise pene- "trating and raising the earth and extracting "broken or injured tools.'

"'There are also suggestions for employing long "buckets,' also lift pumps, with a succession of "buckets, but as these suggestions possess little if "any novelty, it cannot be intended to claim them "as part of the patent.

"Nothing contained in this extract in any way "changes the opinion I have given, with the reasons "therefor, that the invention set forth in the patent "in suit is not described or anticipated by anything "contained herein."

Deft.'s Exhibit No. 7.

"Is an extract from page 388 from McKenzie's "5,000 Receipts Article 'To raise water in all situa- "tions.'

"There is not in that extract any description by "the following of which a man could make any "kind of a well, and nothing contained in it "describes, refers to, or even suggests such a well "as is set forth in the specification in the patent in "suit. And as further reason for saying that it "does not describe such a well are the facts that the "same extract was set up in the cause of Andrews "*v.* Carman, and also in the cause of Hine & Ste-

" phenson *v.* Wahl, and by the decisions in those " causes judicially declared not to contain an antici- " patory description of Green's invention."

Deft.'s Exhibit No. 8.

" Is an Extract from Rees' Encyclopædia, Vol. " 40, Philadelphia, 1819, published by Samuel D. " Bradford, under the heading,

' Well in Rural Economy,'

" The statement therein contained is: 'That a " French philosopher *proposed* that the ground " should be perforated by means of an auger or " borer, a cylindrical wooden pipe being then placed " in the hole and driven down by a mallet, and the " *boring* continued, that the pipe may be forced " down to a greater depth.' * * * *

" ' In proportion as the borer becomes filled with " earth it should be drawn up and cleared.' * *

" ' The boring may be carried to much extent " under ground.'

" This statement was in evidence in the cause of " Hine & Stephenson *v.* Wahl, and was decided not " to anticipate Green's invention, nor is there any- " thing in the article describing any portion of the " invention as set forth in the patent in suit."

Deft.'s Exhibit No. 9.

" Extract from the Journal of the Franklin Insti- " tute, Third Series, published in 1844, from Vol. " 12, page 128.

" This extract contains no description of any well " of any kind ; it merely states that in sinking a well " at the Portsmouth dockyard, one of the principal " docks gave way in consequence and the sinking " of the well was abandoned."

Deft.'s Exhibit No. 10.

"Is an extract from 'Brand's Encyclopædia or "Dictionary of Science, Literature and Art,' Harper "Bros., New York, 1843, vol. 3, page 1333, under "the heading 'Artesian Well.'

"No *description* of *any* well appears in this ex- "tract. The reference is as follows: 'All that is "necessary, therefore, is to bore down to the stratum "containing the water, and, having completed the "bore to insert a pipe, which may be either left to "overflow into a cistern or it may terminate in a "pump.'

"I found, on consulting the dictionary, between "the words 'pipe' and 'which,' the words 'into the "bore.' I also found in addition to the extract, and "following it, a statement that when the water "would not rise to the surface a well may be sunk "to a certain depth, the auger hole made and the "pipe inserted into it at the bottom of the well (and "from the bottom of the well), it may be pumped "to the surface by any of the usual modes, and "continues with the statement that at Chelsea, in "1793, a well was dug 394 feet within 20 or 30 feet "of the river Thames; that usually they bored 10, "15 or 20 feet below the bottom of the well, and at "the last boring that the water rose rapidly 200 feet, "scarcely allowing the digger time to withdraw the "borer and tools and be drawn up; the article, "further continuing, speaks of the process of bor- "ing used by Mr. Goode, who put down successful "wells at Tottenham and Mitcham, both of which "at one time equaled 8 gallons per minute, but had "been much reduced on account of the great "number of holes.

"These latter statements go to show that the "Artesian well making, at the date of that publica- "tion, 1843, still followed the method of boring as "long previously practiced, and states 'that the "process of boring the earth for spring water has "lately been practiced with great success by Mr. "Goode.'

" For these reasons it is evident to my mind that " nothing at that date had been known or published " describing the method invented and patented by " Col. Green.

Deft.'s Exhibit No. 11.

" Is an extract from Rees' Cyclopædia purporting " to be from Vol. 35, under the heading

" SPRING DRAINING PUMP."

" Speaks of a pump constructed of copper 'in the " pipe form, in a very neat, simple, cheap and " simple manner, so as to admit of being put down " into the ground in holes formed by the boring " auger; and being made to be wrought as a pump, " is capable of showing the presence of water where " the pressure of it in the higher grounds above is " not sufficient to force it up through the auger " holes, which is the case in many instances.

" This description does not give or set forth any " of the characteristics of a driven well, either in " its method of making, mode of operation, or " results; it is a mere placing of a pump in an " auger hole, to ascertain the presence of water; it " does not describe a pipe tightly inserted into the " earth, and receiving water directly from the " earth by the pressure of the atmosphere, forcing " it into the well, which had been previously re- " lieved from the pressure of the atmosphere, nor " was it used as a well. The entire description " leads me to believe that the pump with its copper " tube was inserted into a well hole of considerably " larger diameter, leaving the pressure of the atmos- " phere to act directly upon the surface of the water " in the well, surrounding the pump pipe, but the " description is not such as would enable any per- " son to do the same thing in the same manner " without further instructions. This extract was

" set up by defendants in the cause of Andrews " *et al. v.* Carman, and Hine & Stephenson *v.* Wahl, " and in those cases decided not to have been an " anticipation of the invention of Green, as set " forth in the patent in suit.

Deft.'s Exhibit No. 12.

" Extract from the London Encyclopædia, London, " 1829, Vol. 22, page 593, headed

' WELL TUBE.'

" An *hydraulic instrument* for procuring water " in almost any situation, *suggested* by M. Cadet de " Vaux.

" He directs the tube to be placed in the hole " and driven down with a mallet; after which the " boring must be continued that a pipe may be " driven to a greater depth. As the auger be- " comes filled with earth it ought to be drawn up " and emptied. * * * * *

" The boring is carried to a considerable extent " under ground, and water is in most instances ob- " tained * * *

" The plan of *boring for water* has of late been " much practiced in the neighborhood of London."

" This is not such a description of a method of " making and operating a well as would enable any " person, by simply following the instructions con- " tained in the article, to make a well, but with the " knowledge I have obtained from the extracts here " offered as exhibits, and other matter from the " same works, and from other publications relating " to well making, it is plain to me how the author " *intended* parties to proceed, and that the method " he proposes is in its main and important features, " and intended to be the same, as the plan that had " then of late been much practiced in the neighbor- " hood of London, to wit.

"Sinking a well by driving down a tube, boring "or drilling out the earth and rock, and bringing it "to the surface, with such or similar tools as are "described in Goode's patent."

Deft.'s Exhibit No. 13.

"An extract from the Mechanics' Magazine, "London, 1824, Vol. 2, pages 15 and 16, under the "heading

'BORING WELLS.'

"This extract is a copy of a letter from a well "sinker, stating his difficulties, and asking for in- "formation as to how he can overcome them; also "an extract from the same work, Vol. 2, page 60, "being an answer to a well sinker's inquiry as to "how he should overcome his difficulty, and "signed "T. T.," and advises the driving down of a "cast iron pipe, the use of boring rods, and the "*shell borer* to bring out gravel that gets into the "pipe.

"Nothing contained in this exhibit has any rela- "tion to such a well as described by Col. Green in "the patent in suit, and, in fact, is nothing more "than a suggestion, to a party in the business, how "to proceed under certain emergencies, and is not "such a description as would enable any person by "following it alone to make a successful well, much "less a well constructed as, or operating in the "manner of the well described in Letters Patent in "suit."

Deft.'s Exhibit No. 14.

"Extract from Harpers' New Monthly Magazine, "September, 1851, page 640, Harper Bros., New "York.

"Nothing is herein contained except by inference, "as to a well of any kind. It says:

"After going as deep as the gravel or quicksand "in which the first vein of water is found will per- "mit, and reaming out the hole, the log is inserted, "having its lower end sharpened and defended by "a tapering iron band well secured. This may be "driven down without much trouble through the "bed of quicksand, and a passage is thus secured "to the rock."

"This description of the log, so far as it goes, gives "the general method in use for sharpening logs, as at "that time used for making Artesian wells; that is, "by surrounding the bottom end with an iron band "tapering to an edge at the bottom. It is at best "but a very imperfect description, even of that, and "can only be understood when read in connection "with other exhibits in this cause, and other "articles upon the subject of Artesian well boring."

Deft.'s Exhibit No. 15.

"Is an extract in the French language from 'De "l'Art du Fontenier Sondeur et des Puits Ar- "tesians,' Paris, 1822, page 99, secs. 79 and 80, "page 106, sec. 88, also pages 107 and 108, sec. 91, "pages 109 to 112, and page 113, sec. 95, with "translations into English furnished by defendant.

"These extracts also relate to the making of the "long well known open Artesian well. They do "not contain such a description of well making, as "if followed exactly would enable a party to make "a successful well of any kind, but in connection "with the information upon the subject, contained "in this and other extracts filed as exhibits in this "cause, and from information derived from other "works upon the subject, I am enabled to form a "pretty accurate opinion as to what style of wells "and their method of making is referred to. The "boxes referred to are undoubtedly square wooden "boxes with their lower ends sharpened and pro- "tected by an iron band brought to an edge at its

" lower extremity, which boxes are driven down
" through the loose earth and quicksand, which
" are taken out, from and through them (the boxes)
" as they are sunk into the earth, their use being to
" keep the sand and loose earth from falling into
" the opening into which the buses are to be in-
" serted. These buses or pipes of wood being
" guarded at their lower ends by iron bands made
" sharp upon their lower edge, *like* the bands upon
" the lower ends of the wooden boxes, as is dis-
" tinctly stated in the translation, although *this iron*
" *guard* upon the end of the pipe, which in the
" original French is *termed a sabot*, is *in the trans-*
" *lation* rendered a *point*, the literal definition
" being a shoe, but whether a shoe or a point, the
" statement from page 109 is, that the tubes are put
" into the calcareous strata which previously is
" bored a diameter of 7 inches, in order that they
" can enter therein, only by means of hard forcing.
" The wooden tubes having been previously de-
" scribed in section 80 as being of seven inches ex-
" terior diameter; their exterior diameter being
" seven inches, and the diameter of the bore, as on
" page 109, also being 7 inches, making a tight fit,
" the object evidently being to prevent the upper
" stratum of water passing down between the
" wooden tube and the calcareous stone or earth
" surrounding it, thus preventing any water pass-
" ing up through the tube, except the water in
" the stratum below the calcareous; that the
" wooden tubes are protected by an iron ring or
" shoe instead of having a point is evident from the
" fact that with a point there would be no means of
" ingress for the water into the tube, as no provi-
" sion is made, suggested or hinted at for the
" entrance of water into the tubes except through
" their open lower end. If, however, such provi-
" sion were made for entrance of water through the
" points into the tubes, still as it is distinctly stated
" that the hole is drilled previously to the tubes
" being put in, whether they are protected by a

" shoe or point they are not driven to form a well " without the removal of earth upwards, so that it " is totally immaterial whether the drilling takes " place through the open ended tube or is first " done before the tube is inserted. Therefore, from " this description, it is evident that *in their methods* " *of construction*, the wells referred to in Exhibit " 15, are not made in the manner set forth in the " specification of the patent in suit. The article " from section 94 which closes with the statement " that if the waters do not rise inside of them to " be poured out on the surface of the ground, " but remain stationary a few meters below, " then 'there is used in order to draw them up, " pumps like those which are constructed in " every country. Nothing in this statement " regarding the use of pumps shows, suggests or " hints at the employment of Green's method " of obtaining water from the earth *or in any* " *manner utilizing his discovery;* nothing is de- " scribed other than the old well known and often- " described methods of procuring water from the " earth by the Artesian process, the water either " flowing over the top of the well or in default of " its rising high enough to flow, it is pumped from " the well by a pump having its suction pipe in- " serted down into the well, and not connected " thereto by an air tight connection. I have omitted " to notice that portion of the article, page 113, sec. " 95, which is merely a statement, that sometimes, " after a number of years, the volume of water from " wells established according to the principles and " processes described, diminishes, and gives a " method of operation by which, by the stroke of a " piston, the calcareous parts which stop the fis- " sures through which the water bursts, are forced " to ascend to the surface of the ground, but noth- " ing therein contained refers to anything described " in Letters Patent in suit."

Deft.'s Exhibit, No. 16.

"Extract from 'Bulletin de Musee de l'Indus-
"trie, 1846, Vol. 10, page 163.' Translation.

"Contains no description of a well of any kind, or
"the method by which water is obtained from the
"earth by one. It speaks, however, of boring a
"well, and to depth of 1,000 meters (some 3,250
"feet); this last statement of fact being of itself
"alone sufficient to show that the well was of an
"entirely different character from the well de-
"scribed in the Letters Patent in suit; and further
"it says, I have brought up by this means pebbles
"of six centimeters in length and three centimeters
"in thickness, a state of facts which could not exist
"in the operation of a well made in accordance with
"the specification of the Letters Patent in suit."

Deft.'s Exhibit, No. 17.

"Being an extract from 'Hericart du Thury Jail-
"lissement des Eaux,' Paris, 1829, pages 274 and
"275.

"Gives a very indistinct, and not by any means a
"full description, of making an Artesian well by
"boring and putting down a pile with a bore hole
"through its entire length, of three inches in diam-
"eter, furnished with iron at both ends, the one
"which is to enter the ground should be as sharp as
"possible; they drive this pile with the beetle as far
"as possible, and *when there is no means of making*
"*it enter any further they employ the auger, which*
"*should finish the boring of the well.*

"This description, such as it is, occurs in a dis-
"course by the author, which is at the end of 'My
"Course of Mathematics.' It is not such a descrip-
"tion as, by which, without further information, any
"man could make a well, and contains nothing which
"can be construed into a construction of a driven
"well, made according to the specification of the

"Letters Patent in suit, but, so far as it goes, is in "perfect accord with other numerous descriptions of "the making of Artesian wells by boring, drilling, "etc., and raising the earth displaced by the tubes "to the surface."

Deft.'s Exhibit, No. 18.

"An extract from F. Arago Oeuvres, tome 6, "page 457, Paris and Leipsic, 1856. Translation "furnished by defendant, appears to be an addenda "to an article in which some system has been de- "scribed, and speaks of an injection of the water "that takes place through the inside of the boring "apparatus, and says :

"'The idea of causing the water to come up "through the inside of the pipe of the well, offers an "easy means of *boring* below a sheet of rushing "water *without having need of a pump.*' * * * '*It* "*will drag to it and bring up to the surface of the* "*ground all the detritus.*'

"Nothing herein contained has reference to the "methods of making Driven Wells ; but, so far as "it goes it described a method directly and entirely "antagonistic to the method of procuring water as "by the specification of the Letters Patent in suit."

Deft.'s Exhibit, No. 19.

"Extract from a work of F. Garnier, 'Traite sur- "les Puits Artesiens,' Paris, 1826, pages 207, 208, "210–227 and 228. Translation furnished by de- "fendant.

"Contains a repetition of the method of opening "seams to admit of the passage of water into the "well, the fissure having been narrowed by calcare- "ous parts, which are interpolated there ; practi- "cally the same operation as described in Exhibit "No. 15, which is by the same author.

"In the plates which accompany this article in "the original French, the logs which line the well "are shown with open ends, and are undoubtedly "of the same character as the pipes or buses which "are described in the article Exhibit No. 15. It "goes on to state: 'We have performed these "operations on a well made since the year 1810, in "a piece of ground of which figure 4, plate 2, pre- "sents the vertical section, and we have found * "* * that the volume of water produced was "* * * twenty-one cubic meters per hour, whilst "it was before this operation only fifteen cubic "meters.'

"The purport of this entire article, as well as the "article Exhibit No. 15, by the same author, goes "to show that the water obtained by these wells "was procured not from the earth, but from fissures "in the rock, and that the water flowed from the "wells.

"Figure 4, plate 2, referred to in the quotation "above, in the original work shows a tube open at "both ends and no pump of any kind operated with "it. That portion of the extract from pages 227 "and 228. speaks of 'cast iron pipes, about which "we have just been occupied,' evidently referring "to a description preceding the extract; and says "that by the means of a single pipe to restrain the "sands which are met, one succeeds almost always, "even when the thickness of the sands exceed 100 "feet.

"'When these sands are perfectly supported, they "proceed then with the boring into the midst of the "clays, giving to it until they have reached the "chalky limestone, a diameter of four inches, "* * * that the beds of sand are passed more "quickly by using cylinders of cast iron than with "boxes of wood and that because the ground need "not be bored to so great diameter.' * * * "'One should nevertheless employ the English "process only when it is a question of placing wells "in grounds which present, in order to be passed

" through, great difficulties, and which require the " use of three or four boxes, because the expense, " then, is very nearly the same in both cases.'

" These boxes are driven down, one inside an- " other, each succeeding being smaller than the one " preceding, and not being one continuous box or " square tube; and their use is positive proof that " the process of well making, as described in the " article, had no likeness or analogy to the process " described in the Letters Patent in suit; and the " method of procuring water does not utilize the " discovery of Col. Green, and nothing is described, " suggested or even hinted at, which involves *his* " *method of construction or operation, or utilizes* " *his discovery.* Every portion of the description " relates to an entirely different mode and method."

Deft.'s Exhibit, No. 20.

" Extract from the Encyclopædia of Domestic " Economy, Harper Bros., New York, 1849.

" This extract is a description of an ordinary suc- " tion pump and its working. The figure connected " with the article in the work itself, is a cut showing " a suction pump with its suction pipe inserted into " an open well. No description is given of the well " or its manner of making, but the cut speaks for " itself. There is nothing relating to a driven well, " an Artesian or any other well; it is simply and " only a description of such a suction pump as has " been in use as long as I can remember, and noth- " ing in the article, or in the cut annexed, has any " relation to, or connection with, a driven well, " and, in fact, except as shown in the cut, there is " no reference to a well of any kind, if indeed the " cut represents anything more than a tank of " water into which (the water), as the article states, " the suction pipe is plunged.

" In addition to this direct testimony regarding the twenty Exhibits introduced by defendants (and

the only testimony in the case concerning them), we refer to the testimony of the same witness (Q. and A. 9 and 10, Rec. 49–55) giving extracts from English scientific and government publications, and papers read before the leading societies of English and London engineers, which give the strongest corroborative testimony in support of his views regarding the various exhibits set up by appellants, but especially to those in connection with the Goode patent, which had at the time of the cited publications, been in well known public use in the vicinity of London for over 40 years; and still these engineers, scientists and army officers, men whose calling insure their knowledge of these matters, unanimously credit the Driven Well as an 'AMERICAN INVENTION' and the British Government itself adopted their use (paying royalty therefor), in the Abyssinian expedition, sending out a special corps of well sinkers under Lieut. Le Mersurier, assistant field engineer, to set up 'THE NEW AMERICAN DRIVEN WELLS AND PUMPS' at different points on the army's line of march" (Rec. 51-52).

The *driving* of a well, to utilize Green's discovery, is only necessary to be such as shall insure the openings in the tube to be in close contact with the earth below the surface of the water in the earth so that there shall be no free water between the well tube and the earth in the water stratum. Driving from the surface of the ground to water may not in all cases be the easiest or most expeditious, but when water is reached, the tube must, to a distance above the openings for the admission of water, be in close contact with the earth, which condition is insured by driving or forcing down the tube after the water in the earth is reached, and the pressure of the atmosphere is utilized to force the water directly from the earth into the well, which it will not do, if free water surrounds the tube from its surface down to the openings, and the earth is not there in contact with the tube.

" through, great difficulties, and which require the " use of three or four boxes, because the expense, " then, is very nearly the same in both cases.'

" These boxes are driven down, one inside an- " other, each succeeding being smaller than the one " preceding, and not being one continuous box or " square tube; and their use is positive proof that " the process of well making, as described in the " article, had no likeness or analogy to the process " described in the Letters Patent in suit; and the " method of procuring water does not utilize the " discovery of Col. Green, and nothing is described, " suggested or even hinted at, which involves *his* " *method of construction or operation, or utilizes* " *his discovery.* Every portion of the description " relates to an entirely different mode and method."

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the only testimony in the case concerning them), we refer to the testimony of the same witness (Q. and A. 9 and 10, Rec. 49–55) giving extracts from English scientific and government publications, and papers read before the leading societies of English and London engineers, which give the strongest corroborative testimony in support of his views regarding the various exhibits set up by appellants, but especially to those in connection with the Goode patent, which had at the time of the cited publications, been in well known public use in the vicinity of London for over 40 years; and still these engineers, scientists and army officers, men whose calling insure their knowledge of these matters, unanimously credit the Driven Well as an 'AMERICAN INVENTION' and the British Government itself adopted their use (paying royalty therefor), in the Abyssinian expedition, sending out a special corps of well sinkers under Lieut. Le Mersurier, assistant field engineer, to set up 'THE NEW AMERICAN DRIVEN WELLS AND PUMPS' at different points on the army's line of march" (Rec. 51-52).

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V.

Laches in Bringing Suit.

This defense is not set up in the answer.

Appellant speaks of the "ill repute" of the Green patent. The expression is ill founded; there is not a word of proof to sustain it.

The patent has been in constant and extended litigation from Brooklyn to Des Moines ever since the grant of reissue in May, 1871. Evidence shows from 500,000 to 1,000,000 of the wells in use, the greater part infringements. The case of Andrews *v.* Carman was begun immediately after grant of reissue. Equity will not expect a patentee to bring suit promptly against *every* infringer, or be charged with *laches*—this would be requiring an impossibility.

Judges Nelson and Betts held that the owner of a patent was not to be charged with *laches* because he withheld suit during the pendency of other suits to determine his rights under the patent.

Van Hook *v.* Pendleton, 1 Blatch., 193.

So held also, in a suit under the Green patent, by Judge Nixon.

Green *v.* French, 16 O. G., 215.

A patentee is not required to notify an infringer of his infringement; the *patent* itself, as the very word implies, is sufficient notice.

It has been a matter of notorious publicity that the owners of the Green patent have been for 15 years vigorously enforcing their rights all over the country, by, perhaps, the most extended patent litigation ever known.

The bill avers notice to defendant, and his disregard of such notice; the answer fails to deny such averment.

Eames, the appellant, testifies that the wells in question were put down by Clark and Platt in the Fall nine years ago; as he so testified in November,

1880, the wells were made in the Fall of 1871. He also says: "Q. 6. State whether the wells, or either of them, have been in operation from the time when they were constructed until now, and *in use?*

"A. *Most of the time.*" (Rec., p. 34.)

Under the construction given by the Courts above cited, each *using* of the well was an infringement, so that it follows that the infringement charged covered not alone the *making* in Fall of 1871, but each and every act of *using* up to the filing of the bill.

This defense, therefore, is not tenable.

VI.

The Reissue Question.

The patent, as a "*Reissue*," is assailed on several grounds:

1. For repugnancy to the original.
2. For omitting the "Suggett disclaimer."
3. For *laches* in making application.

The omission of the Suggett disclaimer has been sufficiently considered—*ante* p. 30.

The other grounds will be considered together, at some length.

Col. Green, an army officer, when about to lead his regiment to the field early in the war, desired to add to the efficiency of his command by devising a new and better mode of procuring water for troops on the march, and inspired by that wish, *discovered* that if a tube open at or near its lower end was projected down into a water bearing stratum, with a pump at its upper end, the water could be drawn from that tube and thence delivered continuously in large quantities.

While this discovery remained untested it was only an interesting theory. When tested and demonstrated by experiment, the discovery became clothed with the qualities of an invention, and entered the domain of patent law. The abstract became concrete—the "principle" became so identified with the mechanical process that the process became patentable and the patent drew to itself all the value of the doctrine of equivalents.

In other words the thing invented was not a tool, or a *mere* mechanical operation, but a broad *process*, first utilizing a great discovery or principle.

Having first noted the principle, having first put it in use, and having first discovered *one* practical operation or process, the inventor became entitled to protection commensurate with this truly great invention, and, of course, such protection must include all means which utilize the discovery in substantially the same way.

The invention was a new process of constructing wells, or a new process of obtaining a supply of water.

It was not the invention of a *machine*, or a *tool*, or any combination of mechanism.

And the inventor always expressly claimed the process, and indeed the intendment of law is that the claim shall be held to be as broad as the invention, unless the express and clear language of the specification and claim forbid anything but a narrower construction. Both in the original and the reissue, the inventor expressed his claim by the word "process."

There must be a clear and manifest repugnancy between the reissue and the original in order to justify the destruction of all the inventor's right by declaring his reissue void. All fraud being out of the question, he surrenders his patent in good faith, in order to amend defects as allowed by law. He submits himself, under the law, to the decision of the proper officer, who adjudges that he may properly and lawfully make such an amendment. Only

upon the faith of such a decision does he yield his rights originally secured. If in his judicial view of the situation the Commissioner holds that the law does not permit the change proposed, he stands upon his original patent, and maintains his rights, under it as best he can.

If, however, the tribunal to which the law directs him to appeal decides that his proposed change is just and lawful he surrenders all he has, and takes his new letters—and must stand thereafter upon them.

If he act in good faith it should be difficult indeed in any case to deprive him of everything by reason of the error of judgment made by this tribunal to which he fairly commits the consideration of his rights, under definite statutory provisions.

A fortiori, in the case of a patent of the first order of merit and public utility, against which there is no color of substantial defense other than the technical one of over-expansion. When a man has conferred upon the world a great boon, it is hard indeed to say to him—after years of successful litigation, "You must now lose all reward because the Commissioner of Patents, in the exercise of his discretion as to reissues, under the law, has committed the mistake of accepting a surrender of all you had, and giving you instead something that is worthless."

It is no answer or consolation to say that it was the fault of the inventor in seeking the change. If he acted in good faith he only sought what the proper tribunal might adjudge to be his right. If refused he retained what he had; if acceded he gave up the old in the confidence inspired by judicial decision that the new was better than the old. To lose all would be a punishment due only to fraud or folly too gross for commiseration.

In terms this appeal touches only the soundness of Judge Shipman's decision, but in effect it will also affirm or reverse the decisions of many Circuit Courts and their eminent judges. It will ratify or

disapprove Judge Fisher, Judge Benedict, Judge Dillon, Judge Nelson, Judge Gresham, Judge Wheeler, Judge Nixon, Judge Blatchford and Judge McCrary.

Never has there been such a *consensus* of opinion by so many courts upon a single patent so elaborately and ably litigated.

The very fact of such agreement among judicial minds disposes of the notion that there is a *clear* and *manifest* repugnancy between this reissue and the original. Seven Circuit Courts could not see it, though the most ingenious efforts were made to point it out.

But a repugnancy fatal to the inventor's rights should not be such as can only be arrived at by the skill of microscopic criticism.

This Court, always liberal and just to the true inventor who has benefited his age by his efforts, will not cavil with narrow pedantry over hair-splitting verbal discussions, but exercising a wise and sound criticism, with every proper leaning toward the maintenance of justly acquired rights—will consider the sole question—"Does the reissue secure to the patentee the thing which he invented and described in the original patent?"

Concerning this question it seems to be supposed that a new doctrine has been lately propounded by this Court—unknown to the eight Circuit Courts which have sustained this reissue.

We do not so understand it. The statutory provisions on the subject have not varied much since the first introduction of the system of reissues in 1836.

Long before the law of 1870, under which this reissue took place, this Court announced its views upon the subject in language as emphatic as any employed in the recent cases.

In Burr *v.* Duryee, 1 Wall, 531, Mr. Justice Grier said: "The surrender of valid patents and the granting of reissued patents thereon, with expanded or equivocal claims, when the original was clearly

neither inoperative nor invalid, and whose specification is neither defective nor insufficient, is a great abuse of the privilege granted by the statute and productive of great injury to the public. This privilege was not given to the patentee or his assignee in order that the patent may be rendered more elastic or expansive, and, therefore, more available for the suppression of all other inventions."

This was the law as expounded by this Court in 1863, before the date of Green's original patent.

It was in view of this admonition that all the circuit judges who have passed upon this reissue considered the question. And in the light of this decision all have declared this reissue to be valid.

The recent decisions of this Court on the subject, following each other so closely, and spreading such terror among adroit owners of patents (generally grasping assignees and not original inventors), seeking in bad faith to make their patents "more available for the suppression of other inventions"—have been merely emphatic reiterations of the old doctrine, intended to rebuke and put a stop to such abuses.

They were not designed to promulgate any new law—much less to make a pitfall for the destruction of honest inventors, fairly seeking, through lawful appeal to the discretion of the Commissioner, to secure the just fruits of their skill against invasion by those who are ready to take advantage of the "defects and insufficiencies" incident to the first efforts to put inventions into proper verbal forms.

And a brief reference to those decisions will show that they have no such effect. A rebuke, however, emphatic, to a fraudulent expander of patents under the guise of a reissue, in order to suppress other inventions, need have no terrors for the inventor seeking in good faith under the guidance of the Patent Office the best expression of what he really has invented.

The first of the cases alluded to is Miller *v.* Brass Co., 104 U. S., 352.

The patent was for improvement in lamps. It was issued in 1860, for fourteen years, and extended for seven years longer. The first reissue was in 1873 and the reissue in suit was in 1876—sixteen years after the patent. The original was for a double dome as a means for dispensing with a chimney. The reissue was for a single dome *with* a chimney. The Court said: "It is not only obviously a different thing, but it is the very thing which the patentee professes to avoid and dispense with."

In view of this fact it was most natural and just that when such a reissue, obtained after fifteen years, came before the Court for examination, the principles laid down in Burr *v.* Duryee, should be enforced by yet stronger language, and warning given that in all cases *where a claim is sought to be enlarged* on *such* grounds of mistake as would justify a Court of Equity in correcting it, it must be done promptly, and before other rights had arisen which could be injured by the change.

This was the whole meaning of the Brass Co. case which has excited so much interest among patentees. And in order to allay unreasonable fears, and to confine the case to its true purpose, the Court takes pains to add to its condemnation of the abuse illustrated by the case in hand—which was the fraudulent enlargement of a *claim* under the guise of a reissue—this explanation as to the rights of inventors honestly seeking to correct errors.

"The correction of a patent by means of a reissue where it is invalid or inoperative for want of a full and clear *description of the invention*, cannot be attended with such injurious results as follow from the enlargement of the claim. And hence a reissue may be proper in such cases, though a longer period has elapsed since the issuing of the patent."

During the argument of Wahl *v.* Hine in this Court, concerning the Green patent, counsel for ap-

pellant cited Miller *v.* Brass Co. as conclusive against the patent because there had been three years' delay in making the application.

Mr. Justice Bradley (who had written the opinion) interrupted counsel and said, in substance that the Court had not established a *time* limit; that the Court meant only, as to delay, that the patentee *might* forfeit his right to a patent with broadened claims by *unreasonable delay;* but what would amount to such delay would depend upon the special facts of each case.

The next case was James *v.* Campbell, 104 U. S., 356.

In that case it was held that "It is perfectly obvious that the patentee had embraced in the Reissued Letters Patent several matters of supposed invention different from and additional to the invention which formed the subject of the original patent, and it is principally if not wholly these new and additional claims which the appellant James, as Postmaster of New York, is charged with infringing."

The Court points out some of these obvious additions in a reissue obtained seven years after the original, and shows that it required only an inspection to observe them, and under this state of facts it repeats the doctrine of Burr *v.* Duryee with emphasis, and holds that,

"When a patent fully and clearly without ambiguity or obscurity describes and claims a specific invention, complete in itself, so that it cannot be said to be inoperative or invalid by reason of a defective or insufficient specification, a reissue cannot be had for the purpose of expanding and generalizing the claim so as to make it embrace an invention not described and specified in the original."

This is the whole force and meaning of this decision, and it is plain that it promulgates no new doctrine, but only condemns an obvious abuse, and annuls a reissue unlawfully obtained.

It only declares the plain meaning of the law of reissue—that a patentee shall not use it, or rather abuse it, after long delay, for the sole purpose of claiming something of which he did not apprize the public in his original specification.

Nor did this decision furnish any occasion for anxiety on the part of inventors honestly seeking to secure more fully and firmly against invasion, the inventions they have fairly but imperfectly described.

The next case, still following close upon the others, was Heald *v.* Rice, 104 U. S., 737.

This was similar to the others. It was a like instance of the abuse of the law, palpable on the face of the papers and obvious on a mere inspection.

The Court says: "It appears from the mere reading of the two specifications that the invention described in the first is for the return flue boiler, while that described in the second, abandoning the claim for the boiler itself, is for a particular mode of using it with straw as a fuel, by means of an attachment to the furnace door for that purpose. It might well be that Rice was entitled to patents for both separately, or to one for both inventions. But it is too plain for argument that they are perfectly distinct."

The necessary result followed, and upon the well-settled principles so lately emphasized, the reissue was declared void.

Nor is there anything in this case, any more than the others, to disquiet honest inventors who have sought to secure their real rights by reissue, under the decision of the Commissioner of Patents, invoked in good faith.

The next case was Bantz *v.* Franz, March 20, 1882 (Morrison's Transcript, vol. 4, 341).

The original was issued 1858, and the reissue after fourteen years.

In this case the specifications and drawings in the original and reissue were substantially identical, but in the original the claim was for a combination or arrangement of certain contrivances relating to furnaces for steam boilers, while the reissue was for a

series of six distinct parts of such furnaces separately, or in different combinations.

The Court said: "It is EVIDENT, upon a cursory reading of the specification and claim of the original patent, that it was meant to cover a combination of the several contrivances therein described, and not to cover the several parts of the former as distinct inventions. No claim is made for the several parts of which the former is constructed, but for the arrangements embracing for united use in the manner and for the purposes specified, the following features," etc.

And the Court proceeds to show that no patent could have been obtained for such distinct parts, but only for the combination, and holds that a reissue claiming these parts separately after nearly fourteen years' delay, is void, and that if the original patent was defective or insufficient in claiming the combination instead of the several parts distinctly, it was discernible on inspection immediately, and could have been corrected promptly.

The next case was Matthews *v.* Machine Co., March 27, 1862 (Morrison's Trans., vol. 4, 347).

In this also the reissue attempted to split up the elements of the invention claimed as a combination in the original, and thus to enlarge the scope of the patent, and to obtain by reissue what would have been rejected if originally applied for.

The Court says: "It cannot be denied that each of these separate claims is much broader than the claim in the original patent, and they are put forth in the reissue fourteen years after the original was granted. The latter showed on its face that these broad claims were not made * * * The case clearly comes within the ruling lately made in Miller *v.* Brass Co."

The next case was Johnson *v.* Railroad Co., May 8, 1882 (4 Morrison's Trans., 931).

In this case fifteen years elapsed before the reissue, and the Court found that it required but slight comparison to show that the claim in the reissue of

which infringement was charged was neither described in the specification nor claimed in the claim of the original—that several of the devices essential to the combination described in the original were left out in the reissue, and a separate claim made for the remaining parts, and to these a new and essential function given, which they could not perform under the original patent.

A brief notice will be given of the subsequent reissue cases.

Wing *v.* Anthony, 106 U. S., 142.

Delay—5 years and 5 months. The original claim was for a *mechanism;* the reissue for a *process.* Of course, such a reissue was clearly void and there was no *need* to consider "delay."

Moffat *v.* Rogers, 106 U. S., 423.

Delay—2 years and 2 months.

Held—*Void*, because the reissue covered "a contrivance essentially different" from that described in the original.

This was sufficient to defeat the reissue. The further fact that the reissue was manifestly expanded to cover another *invention* patented after the original, is also given as a ground of defeasance; but that ground does not appear in the case at bar.

Gage *v.* Herring, 107 U. S., 640.

Delay—13 years and 9 months.

Held—That the original claim being for the combination and arrangement of *seven* elements, the reissue with a claim *omitting two* of the elements formerly claimed, was invalid; especially as there was so long a delay that the patent would have expired in 4 months.

Clements *v.* Odorless Co., 109 U. S., 643.

Delay—4 years and 4 months.

Held—That there were material enlargements of the scope of the invention originally described, with

claims *studiously broadened* for the purpose of covering a *subsequent invention* patented to others.

McMurray *v.* Malory, 111 U. S., 97.

Delay—5 years and 8 months.

Held--That the original patent claimed, in only one claim, a particular combination of parts to make a special kind of soldering iron, while in the reissue this claim was expanded into three claims "so as to cover all soldering irons, no matter what their shape or size;" and so as to cover a *subsequent* device.

Turner, etc., Co. *v.* Dover, etc., Co., 111 U. S., 319.

Delay—11 years and 11 months.

Held—That the reissue was void because taken, after nearly 12 years' delay, with broadened claims to prevent the competition of a successful rival.

Mahn *v.* Harwood, 112 U. S., 357.

Delay—3 years and 11 months.

Held—That "It is clear, therefore, on the face of "the patents, that the *only* object of the reissue was "to *enlarge* the claims. The description was not "altered in the least. The claims in the original "patent were *clear and explicit.* * * * "Nothing was altered, nothing was changed, but "to multiply the claims and make them broader." "There was no *ambiguity*, and nothing to prevent "the patentee from seeing at once, on inspecting "his patent, whether his whole invention was "claimed or not."

Coon *v.* Wilson, 113 U. S., 268.

Delay—3 months and 7 days.

Held—That "The description in the reissue is not a more clear and satisfactory statement of what is described in the original patent, but is a description of a *different* thing * * *"

The patentee waited until defendants produced their different collar—a continuous—band collar,

and then took a reissue to cover the feature of a continuous band, which had been "industriously excluded" from the scope of the original patent.

Wollensak *v.* Rieher, 115 U. S., 96.

Delay—8 years and 9 months.

Held—That where long delay is shown, and it appears that *mere inspection* of the original would have shown that the patent failed to fully cover the area of the invention, and that the reissue, in addition to the 2 original claims, had 7 other claims, that these circumstances constitute laches, which, in equity, disables the patentee from enforcing the right to reissue.

Brown *v.* Davis, 116 U. S., 251.

Delay—11 years and 11 months.

Held—That there was *new matter* introduced into the specification for the purpose of reaching machines which the claim of the original patent would not reach; that this fact, in connection with over 11 years' delay, should defeat the reissue.

Yale Lock Co. *v.* Sargeant, 117 U. S., 537.

Delay—5 years and 1 month.

Held—"There can be no doubt that claim 4 of "the reissued patent was invalid as an *unlawful* "*expansion* of the original patent, on an applica- "tion for the reissue, filed more than 5 years after "the original patent was granted."

Gardner *v.* Herz, 118 U. S., 180.

Delay—7 years and 5 months.

Held—The second claim only one involved. This claim is void *because it is all old.*

Eachus *v.* Broomhall. U. S., late case.

Delay—2 years.

Held—Void, because the original patent was for a *machine*, while the reissue was for a *process*.

Powder Co. *v.* Powder Works, 98 U. S., followed.

White *v.* Dunbar. U. S., late case.

Delay—Nearly 5 years.

Held—That there was delay of nearly 5 years; that the original patent did not warrant the enlarged claim; that the reissued patent contained a claim materially enlarged and expanded, and that it was apparent that the reissue was obtained to cover defendant's patent, granted nearly 4 years after the original patent, and that, under these circumstances, the reissue was void.

We have thus referred at length to all the recent reissue cases which have come under our notice.

None of them, it is submitted, discloses a case parallel with, or damaging to, the case now before the Court.

The substance of the matter is:

1. A claim may be enlarged by reissue, if it is done properly, and the necessity for it has been caused by such inadvertence or mistake as would afford ground for relief by a court of equity.

2. Defects or insufficiencies in the specification which render the patent either "inoperative" or "invalid" for want of a full and clear description of the invention, may be cured by reissue, even after the lapse of an indefinite time.

3. In order to work the hardship of actual loss of all that was secured to the inventor, his attempt to cover more than he originally claimed, *must be so long delayed to the injury of others, and so palpably shown as to subject it to the imputation of fraud.*

Upon these principles it is confidently submitted that the reissue in this case is manifestly valid.

The following are the original patents granted January 14, 1868, and the reissue dated May 9, 1871, in parallel columns:

[4372.]

UNITED STATES PATENT OFFICE.

NELSON W. GREEN, of Amherst, Massachusetts, Improvement in the Methods of Constructing Artesian Wells.

Specification forming part of Letters Patent No. 73,425, dated January 14, 1868; Reissue No. 4,372, dated May 9, 1871.

To all whom it may concern:

Be it known that I, Nelson W. Green, of Amherst, in the County of Hampshire and State of Massachusetts, have invented a new and Improved Method of Constructing Artesian Wells; and I do hereby declare that the following is a full, clear and exact description of the same, reference being had to the accompanying drawing forming part of this specification.

My invention is particularly intended for the construction of artesian wells in places where no rock is to be penetrated.

The methods of constructing wells previous to this invention were what have been known as "sinking" and "boring," in both of which the hole or opening constituting the well was produced by taking away a portion of the earth or rock through which it was made.

NELSON W. GREEN, of Cortland, N. Y.

LETTERS PATENT, No. 73,425.—Dated Jan. 14, 1868.

Improved Method of Constructing Artesian Wells.

To all whom it may concern:

Be it known that I, Nelson W. Green, of Cortland, in the County of Cortland, and State of New York, have invented a new and useful improvement in the manner of sinking and constructing Artesian or Driven Wells, where no rock is to be penetrated, and of raising water therefrom; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 represents a portion of the rod, which is driven or forced into the ground to form the opening or hole for the insertion of the tube that forms the casing or lining of the well, and the avenue through which the water is raised to or above the surface of the ground. And

Figure 2 represents a portion of the tube.

This invention consists in producing the well, by driving or forcing down an instrument into the ground, until it reaches the water, the hole or opening being thus made by a mere displacement of the earth, which is packed around the instrument, and not removed upward from the pole as it is boring. The instrument to be employed in producing such a well, which, to distinguish it from "sunk" or "bored" wells, may be termed a "driven well," may be any that is capable of sustaining the blows or pressure necessary to drive it into the earth; but I prefer to employ a pointed rod, which, after having been driven or forced down until it reaches the water, I withdraw, and replace by a tube made air-tight throughout its length, except at or near its lower end, where I make openings or perforations for the admission of water, and through and from which the water may be drawn by any well known or suitable form of pump.

In certain soils the use of a rod preparatory to the insertion of a tube is unnecessary, as the tube itself, through which the water is to be drawn, may be the instrument which produces the well by the act of driving it into the ground to the requisite depth.

To enable others to make and use my invention, I will proceed to describe it with reference to the drawing, in which—

Figure 1 represents a portion of the pointed rod above mentioned, and Figure 2 a portion of the tube which forms the casing or lining of the well.

The driving rod, A, I construct of wood or iron or other metal, or

My invention consists in driving or forcing an iron, or a wooden rod with a steel or iron point, into the earth, until it is projected to or into the water, and then withdrawing the said rod and inserting in its place a tube of metal or wood to the same depth, through which and from which the water may be drawn by any of the usual well known forms of pumps.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

The driving rod A, I construct of wood, or iron, or other metal, or of parts of each, with a sharp point *b* of steel or otherwise, to penetrate the earth; and a slight swell *a* a short distance above the point, to make the hole slightly larger than the general diameter of the rod. This rod I drive by a falling weight, or other power, into the earth, until its point passes sufficiently far into the water to procure the desired supply. I then withdraw the rod, and insert in its place the iron or wooden tube B, which may be slightly contracted at its lower end to insure its easy passage to its place. In general, this tube B, I make of iron, and of a thickness that will bear a force, applied to its upper extremity, sufficient to drive or force it to its place; and where a large or continuous flow of water is desired I perforate this lower end of the tube to admit the water more freely to the inside. The perforations *c* may be about one-half of an inch in diameter, less or more, and from one to one and a half inches apart; and the perforations

of parts of each, with a sharp point, *b*, of steel, or otherwise, to penetrate the earth, and a slight swell, *a*, a short distance above the point, to make the hole slightly larger than the diameter of the rod. This rod I drive, by a falling weight or other power, into the earth, until its point passes sufficiently far into the water to procure the desired supply. I then withdraw the rod and insert in its place the air tight iron or wooden tube, B, which may be slightly contracted at its lower end to insure its easy passage to its place. In general, this tube, B, I make of iron, and of a thickness that will bear a force applied to its upper extremity sufficient to drive or force it to its place; and where a large or continuous flow of water is desired, I perforate this tube near its lower end to admit the water more freely to the inside.

The perforations, *c*, may be about one-half an inch in diameter, less or more, and from one to one and a half inches apart, and the perforations may extend from the bottom of the tube upward from one to two feet.

The diameter of the tube should be somewhat smaller than the diameter of the swell, *a*, on the drill end of the driving rod, A.

In localities where the water is near the surface of the ground, and the well is for temporary use only, as in the case of a moving army, or for temporary camps, lighter and thinner materials than iron may be used for making the tubes, as, for instance, zinc, tin, copper, or sheet metal of other kind, or even wood may be used.

may extend from the bottom of the tube upward from one to two feet. The diameter of the tube should be somewhat smaller than the diameter of the swell *a* on the drill end of the driving rod A.

In localities where the water is near the surface of the ground, and the well is for temporary use only, as in the case of a moving army, or for temporary camps, lighter or thinner material than iron may be used for making the tubes, as, for instance, zinc, tin, copper, or sheet metal of other kind, or even wood may be used. The rod may be of any suitable and practical size that can be readily driven or forced into the ground, and may be from one to three inches in diameter.

Any suitable well known pump may be applied to raise the water up through the tube to the surface or above it.

Having thus fully described my invention, what I claim and desire to secure by Letters Patent is the herein described process of sinking wells where no rock is to be penetrated, viz., by driving or forcing down a rod to and into the water underground, and withdrawing it, and inserting a tube in its place to draw the water through, substantially as herein described.

N. W. GREEN.

Witnesses :

A. B. STOUGHTON,
JOS. PECK.

The rod may be of any suitable and practical size that can be readily driven or forced into the ground, and may be from one to three inches in diameter.

In some cases the water will flow out from the top of the tube without the aid of a pump. In other cases the aid of a pump to draw the water from the well may be necessary. In the latter cases I attach to the tube, by an air-tight connection, any known form of pump.

What I claim as my invention, and desire to secure by Letters Patent, is—

The process of constructing wells by driving or forcing an instrument into the ground until it is projected into the water, without removing the earth upwards as it is in boring, substantially as herein described.

N. W. GREEN.

Witnesses:

SYDNEY E. SMITH,
W. MORRIS SMITH.

1. The time which elapsed was about three years and four months.

2. So far from presenting a case where upon inspection the claim is manifestly enlarged or varied from the original, it is an instance where the difference between the two claims seems so trifling as scarcely to account for the trouble of the reissue. And the drawings are precisely identical.

Both are claims for a *process*.

Both are for a process of sinking wells.

Both are for this process by means of driving or forcing—in the one a *rod*, and in the other an *instrument*—into the water and ground, as described in the specifications.

The differences are only that in the original the words "where no rock is to be penetrated" used in

the specifications are repeated in the claim, while in the reissue these words, being used in the description are omitted in the claim.

And that in the original the words "and withdrawing it (the rod) and inserting a tube in its place to draw the water through," are omitted in the claim of the reissue while the words "without removing the earth upwards, as it is in boring," are employed in their stead.

These are absolutely all the differences between the claims, and it needs no argument to show that this is not a case where an inventor who has conferred a boon upon mankind must be deprived of all the rights secured to him, because he has, after long laches, sought to gain by reissue what he was never entitled to.

In fact the only real difference is the omission of the words "where no rock is to be penetrated."

The invention as conceived and described by the inventor evidently would be applied generally to soils adapted to the process. Therefore he claimed the use of the process in such localities. But it soon became obvious that such soils might exist beneath a layer of rock which could readily be removed or penetrated in order to reach them and apply the process.

It might be desired to drive a well beneath a flagstone. It is obvious that the inventor did not intentionally exclude such uses of his process, and that so to construe his claim would be a perversion of his meaning.

The use of those words in the *claim* might lead to such perversion, and therefore to avoid this effect of his inadvertence, and within a reasonable time, he simply left the words out of the claim, and said on the outset of his description that his invention was "*particularly* intended for places where no rock is to be penetrated."

It seems trifling to argue that the difference between a *rod* and an *instrument* is such as to invalidate the reissue, or that the change in the mode

of expression "and withdrawing it and inserting a tube in its place to draw the water through," "without removing the earth upward, as it is in boring," was made with a view to enlarge the scope of the patent, or to claim what was not invented.

A reference to both specifications will make it manifest that this was in no sense a substantial change. So slight was it indeed that its purpose is scarcely evident.

At all events, the invention is the same originally made and claimed, and the change in the claim for whatever purpose made, and whether necessary or not, was made in good faith and without unreasonable delay.

3. But the true reason for the reissue was not to change the claim, but to amend supposed defects and insufficiencies in the specifications.

This may be done—even after a long time—not only when they make the patent invalid, but when they cause it to be "inoperative" in a greater or less degree.

That is to say, if a defective or insufficient description tends to circumscribe the fair operation of the invention, the inventor may amend it by reissue whenever he finds it out.

And this for the reason given by the Court in Miller *v.* Brass Co., that such amendment "cannot be attended with such injurious results as follow from the enlargement of the *claim*."

Now, in this view it seems unnecessary to dwell at length on the comparatively slight and unimportant changes in the specification. They are in effect the same, as the drawings to which they refer are identical.

Indeed, it requires a critical examination to discover the nature and meaning of the amendment in the specification and description which was the occasion of the reissue.

In both, the inventor says that his invention relates to an improved method of constructing wells.

In the original he says it is an improvement "in the manner of sinking and constructing Artesian or Driven Wells where no rock is to be penetrated, and of raising water therefrom."

In the reissue he says it is "particularly intended for the construction of artesian wells in places where no rock is to be penetrated," and he goes on to make a remark in explanation not made in the original—"the methods of constructing wells previous to this invention were what have been known as 'sinking' and 'boring,' in both of which the hole or opening constituting the wells was procured by taking away a portion of the earth or rock through which it was made."

Thus far the changes are certainly verbal, and immaterial and are manifestly only for the purpose of explaining more clearly the nature of the invention.

Driven Wells are now so common and familiar that we can hardly appreciate the difficulty then experienced in putting their nature and use in intelligible words.

The original, then, goes on to say in few words how the invention is to be put in practical use. The words are: "My invention consists in driving or forcing an iron or wooden rod with a steel or iron point into the earth until it is projected to and into the water, and then withdrawing the said rod and inserting in its place a tube of metal or wood to the same depth, through which and from which the water may be drawn by any of the well-known forms of pumps."

He then goes on to describe the invention with reference to the drawings in order to enable others to use it.

Now with this specification before him, Judge Fisher, on an appeal from the decision of the Commissioner of Patents, in his decision made a few days before the patent was issued, said:

"I am clearly of opinion that Green first put into practice the conception of making a Driven Well,

and is entitled, therefore, to his patent for the broad claim of sinking wells *by driving down the pump or rod, without removing the earth upward*, and that Suggett was entitled to a patent for the perforated pipe and point for sinking wells, and I therefore affirm the decision of the Commissioner." (Record, page 75.)

Now this decision was on the original specification and claim before the patent was issued.

The specification said nothing of driving down the "*pump*" or of the fact that the process dispensed with removing the earth upwards. But Judge Fisher found its meaning plain enough, and took it for granted from the description that wherever a mechanic was making a well in a soil that would permit it, he would find it *superfluous* to drive the rod first and then substitute the well-tube, and would, of course, drive down or push down the tube itself, as we have done in the box of sand in *our* experiments in court described. *Ante*, p. 13. Just as the carpenter who wants to drive a screw will not bore a hole first if the wood is soft enough for the screwdriver to send the screw home.

Since Judge Fisher found no defect in this particular, sufficient to obscure his view of the real invention as Col. Green conceived it and put it in practice, it was not anticipated that any defective or insufficient description in this respect would make the patent in any degree "inoperative," and it ought not to have done so.

If persons desiring to use this valuable invention had been as wise and as fair as Judge Fisher, there would have been no difficulty, and the patent would not have proved at all "inoperative," by reason of the defect of omitting to suggest this obvious equivalent—the driving of the pump in the first place if the soil was found suitable.

But, as the invention became known and valuable, counsel for the patentee began to scrutinize the patent, and determine whether or not it was in any way defective or not fully operative.

The patent had been drawn, not by counsel but by a "patent solicitor."

Upon such examination, first made about three years after the original grant, counsel found that if a narrow and literal construction were given to the "claim," some might think the process was limited to the driving of an actual *rod* before driving the pump tube; and that if the use of the rod were omitted, and its equivalent the pump tube were driven instead, that the patent would not be infringed.

Accordingly, and to make clear that the use of this manifest mechanical equivalent in carrying out the process, was included in the invention, the reissue was applied for.

There is nothing in this case to show that any one ever actually acted upon the narrow construction above suggested. But, it was supposed that such action might be taken, and in anticipation thereof the patent was surrendered and reissued with an amended specification and claim.

If any one had have made wells while the original patent was in force, without the use of the rod, he would have urged that the *rod* was named in the claim, and that a well made without an actual *rod* would not be an infringement. This would have been unfair and unjust to the inventor. Under such a construction the patent would have been largely inoperative.

Now this was precisely the hardship that the reissue statute was intended to prevent, and it was what this Court, in Miller *v.* Brass Co., said might be done without injury to the public, and without reference to time.

To remedy this anticipated hardship, the inventor applied to the Commissioner to amend this defect in description by putting in it, in express terms, justwhat Judge Fisher declared him entitled to.

The Commissioner determined it to be right, and so the description was amended thus in the reissue:

"The instrument to be employed in producing such a well, which to distinguish it from sunk or bored wells, may be termed a Driven Well, may be any that is capable of sustaining the blows or pressure necessary to drive it into the earth, but I prefer to employ a pointed rod, which after having been driven or forced down until it reaches the water, I withdraw and replace by a tube, made air tight throughout its length, except at or near its lower end, where I make openings or perforations for the admission of water, and through and from which the water may be drawn by any well known or suitable form of pump.

"In certain soils the use of a rod preparatory to the insertion of a tube is unnecessary, as the tube itself through which the water is to be drawn may be the instrument which produces the well, by the act of driving it into the ground to the requisite depth."

This last suggestion—which did not need stating to a mind like Judge Fisher's, but was necessary to make the patent fully operative against obtuse or disingenuous infringers, was the real defect or insufficiency in description which occasioned and justified the reissue.

It was a just exercise of the right conferred by the law, and it would be a monstrous perversion of the law to hold that by using such a right the inventor lost all that he had secured by so much cost and skill.

After this change, the description with reference to the drawing goes on in almost the identical words of the original.

The only noticeable variation is the allusion to the fact that in some cases the water will flow from the well without the aid of a pump, and that when a pump is used it is to be attached to the tube "by an air-tight connection."

It was surely a mere superfluity to say that when you attach a pump to a tube from one to three inches in diameter with perforations only at the

lower end, for the purpose of drawing water through it, the connection with the tube should be air-tight; it is only like saying that a hose or a syphon should not be full of holes, but air-tight in order to perform its functions.

The original patent had stated that the pump must be *applied to* the tube. This is saying that it must be applied properly for the purpose intended—that is, with an air-tight connection, just as a hose must be applied to a fire engine before it can answer its purpose.

But it is urged that Green having disclaimed in his original patent what was secured to Suggett, and having omitted this disclaimer in the reissue, must be held to have embraced in the reissue what he had already disclaimed, and that, therefore, the reissue is void.

The answer is that he did not embrace anything he had disclaimed. What Green and Suggett invented were totally different things.

One was a process of procuring water from the earth, and the other was for certain mechanism, which was as applicable to open wells as to driven wells, and had no relation to the principle upon which Green's invention was founded.

Therefore, when he came to procure his reissue, which was only for the original process, it was entirely unnecessary for him to refer to his former disclaimer, and his reissue did not attempt to embrace anything which had already been embraced in Suggett's patent, and the disclaimer in the original was a mere superfluity—it needed no reference in the reissue, and was therefore omitted.

It may be observed that the Suggett patent was afterwards held void in Hazelden *v.* Ogden, 3 Fisher, 378.

The case of Leggett *v.* Avery, on the subject of disclaimer, has no bearing on this case.

There the patentee, holding a patent embracing six claims, applied for an extension at the expiration of his patent. He was opposed by those interested,

and the acting Commissioner of Patents refused to grant the extension, unless he would abandon all claims except the fifth. Thereupon he disclaimed accordingly, and the patent was extended for the fifth claim only, which the defendants had not infringed. His disclaimer was filed on the 5th of October, 1874, and his extension granted on the ninth of the same month. On the same day he applied for another reissue, which included substantially the rejected claims, the claims which had been rejected and disclaimed. The Examiner refused to pass the application, but through persistence the reissue was finally granted. The Court held, of course, that this reissue was invalidated; he was plainly estopped from embracing in his reissue claims which had been formally rejected, and which he had distinctly disclaimed, and it might almost be regarded as a matter of contract, and his reissue a palpable violation.

It was absurd to pretend, in that case, that his reissue was intended to correct an error which had arisen by inadvertence, accident or mistake. As Mr. Justice Bradley says, in the opinion of the Court, "Such a pretense was too bald for consideration." And certainly this case does not mark any tendency on the part of the Court to depart from principles already established concerning reissues, but simply holds that a patentee shall not be sustained in committing a manifest fraud. Nor is there anything in the cases, Manufacturing Co. *v.* Corbin, 103 U. S., 786, nor in the case of Manufacturing Co. *v.* Ladd, 102 U. S., 408, to sustain the effort in this case to disturb the numerous decisions already made upon this subject. In the latter case Mr. Justice Bradley denounces the abuses which are so apt to arise out of reissues, and shows that the real object and design of reissues have been frequently subverted; but he says nothing which supports the position that where a patentee of a process goes out of his way to disclaim what is embraced in a patent for a machine relating to the

same subject, being a mere mode of operating the process, which patent itself turns out to be void, must submit to having his reissue invalidated because he did not repeat the superfluity. The principle established is, that where a patentee makes a claim which is disallowed by the Patent Office, and thereupon disclaims what is so disallowed, as a condition precedent to the grant, he cannot afterwards, by a reissue, again smuggle in that claim, and expect to maintain his patent.

To say that, is only to say that he will not be permitted to perpetrate a fraud. But in this case no such attempt is alleged, but in procuring the reissue he simply omits what was defective in his original patent, and applies in the strictest way the principles upon which reissues depend. He simply omits to say that he does not claim the Suggett patent, which was never embraced in his original patent, or attempted to be covered by his reissue, and which had been declared void between the time of granting the original patent and applying for the reissue (see Hazelden *v.* Ogden, 3 Fisher, 378).

We have thus noticed at unnecessary length all of the changes made in the Reissued Letters Patent which are the subject of this controversy.

We respectfully submit that the closest scrutiny made in the light of the recent decisions of this Court shows this to be a case in marked contrast with those which revealed the abuses of the statute authorizing reissues, lately condemned so strongly by the Court, and proves that it is one in which the very objects of the statute have been sought in good faith by the patentee and lawfully allowed by the Commissioner.

If any stress is laid on the suggestion of laches on the part of the patentee in seeking the remedy provided by the statute, we reply that the need for the remedy was only developed by time.

When the need of amendment arose, it was sought for and applied.

The statute says: "*Whenever* any patent is inoperative," etc. This expression has no limit but the

term of the patent. The meaning is that whenever a patent *becomes* or is *found to be* inoperative, an amendment may be made.

It is true that there might be a case where by affirmative proof it appeared that other parties had been misled by the supposed defect to make heavy investments, and were thus injured by the delay in correcting it. But here there is no such proof, and no presumption of the kind is suggested, nor is there any fact on which to found one.

SUMMARY.

Prior to Miller *v.* Brass Co. (1881), no case had held that *delay* in applying for a reissue might be a bar to its lawful grant.

It is submitted that this doctrine, to which (as we understand it) we accede, rests upon the law of *equitable estoppel by conduct.*

That when a patentee *unreasonably* delays to apply for a reissue, an *equitable estoppel* is raised to prevent his applying for a reissue with claims broader than those in his original patent. And that if he do so apply, the reissue cannot lawfully be granted. And that if granted, the Courts may declare it invalid.

To this we agree.

But, we submit, that such an *estoppel by conduct* is in the nature of estoppel *in pais*, and must be affirmatively shown to be raised *clearly* and *certainly*, and the party claiming the estoppel *must show that he acted* upon the statements or conduct of the party whom he seeks to estop.

Bigelow on Estoppel (p. 437), states the essential elements upon which estoppel by conduct must be founded. Among them is, *in substance*, this:

The party who seeks to raise the estoppel must show that he was *induced* to *act* as he did by the *representations* of the other party.

Of course, in the case at bar, the "representations" are those contained in the *original* patent. But his *action* (as proofs show) was not taken until

after the reissue, and after (by presumption of law) he knew that the reissue was in force, and was *prima facie* valid. It therefore does not lie in his mouth to say that he acted upon the *representations* of the *original* patent; *for at the time of his action* that patent was *canceled*, and only the reissue was in force. His action was at his own risk, and with knowledge of the representations of the reissue, and those latter representations corrected the former.

Equitable estoppel can arise *only* between *privies;* in this case, between the *parties* themselves.

The government cannot raise the question. Nor can the Courts, as a branch of the government.

In an equity court the party claiming estoppel (as appellant here), ought to plead it in his, answer, by apt averment, so that the other party might have proper and fair opportunity to plead, answer, or demur, and to fortify himself by proofs. True, it has been held that the Court might, as a technical right, consider this defense without an averment in the answer, in a case of *gross* delay, but fair play and liberality suggest most strongly the propriety of averring *laches* by answer. There is no such pleading here. The appellees have had no opportunity to put in any proofs to explain or account for delay. *Non constat*, the patentee, might have been able (for aught the Court knows) to show that during the delay he was *insane*, *under duress*, ill, or absent from the country, or to give other sufficient excuse.

He has had no opportunity to explain, excuse or account for the delay. And for a most sufficient reason. This kind of defense was never sustained or suggested until 1881 (Miller *v.* Brass Co.), long *after* his bill, filed June, 1879, and after the answer, filed August, 1879. Ought he to be required to possess prophetic power and to anticipate the new doctrine? To adjudge him, in this case, guilty of *laches*, and to raise an equitable estoppel against him, and to deprive him of *all rights* under his

patent, because of *delay*, when delay was universal and *universally sanctioned by the courts*, when there was no decision or practice requiring special diligence, seems to be harsh and inequitable to one who has given mankind an invention of the highest value.

In this case the delay was a little over three years; there was no harm to any one; no averment or proof that any one had, in reliance upon a narrow construction of the original patent made a single well or invested a single dollar; no averment or proof that any subsequent invention was "scooped in" by an "expanded" claim. Nothing, whatever, either by averment or proof, to show that the reissue was intended or adapted to take from the public any right it had ever exercised.

In a word—the reissue did but two things, both of which were and are lawful:

1. It *bettered* the *description.*

2. It modified the claim so as to include the manifest *mechanical equivalent used* in the *process* claimed. And this mainly for greater caution, and to warn the obtuse against the substitution in the "process" of one obvious mechanical equivalent—the *pump tube*—for another—the *rod.*

The *statute*, it is certain, imposes no time-limit upon the right to apply for a reissue.

Neither has this Court laid down any rigid and specific time-limit. The ruling in Wollenksak *v.* Rieher comes nearest to doing so. It held that over two years' delay, where the object was *solely* expanded claims, would be fatal—where *mere inspection* of the original patent would necessarily have shown that the claims did not *cover the area* of the invention.

But even this opinion does not say broadly and rigidly, that in no case can a reissue be granted with expanded claims after more than two years' delay.

Mere lapse of time, without other circumstances, is not conclusive upon the existence or want of inadvertence, or of intention to dedicate the invention to the public. Other facts and circumstances must appear, which, in connection with a long delay to assert a right, will *exclude* any other conclusion than the absence of inadvertence, accident, or mistake.

Where, however, all that the record shows is that a patentee was *justly entitled* to a larger or more explicit, or more comprehensive statement of claim of invention, and that he has simply delayed his application for two or three years, it is unreasonable to hold that he has forfeited his right.

One of the soundest counsellors of this court has well said:

"Where an original patent, in view of the state "of the art, shows on its face that the inven- "tion described in it could well support a larger "claim of invention, it ought to be said that *notice* "*is thereby given* to all the world that the larger "claim may be secured by a reissue *whenever* the "inventor discovers the insufficiency of the tech- "nical legal instrument called a 'specification of "'claim,' which he holds. Concede, as we must, "in recognition of the law of the recent cases de- "cided by the Supreme Court, that a patentee must "proceed promptly to secure his right, after re- "ceiving notice of the defect in his patent, lest he "work an estoppel upon himself by his laches "in action, the question at once arises, when he "in fact had, or is to be presumed to have had, "such notice? Is the claim *ambiguous?* Might "he well have *supposed* that he already embraced "such larger subject? Or, is it *apparent*, as in "Miller *v.* Brass Co., where the original invention, as "stated, required the exclusion of a lamp chimney "from the combination, that the reissue undertook "to introduce the very matter originally excluded?"

"The *period of delay* in making the application "for enlargement of claim is, in truth, *the least*

" *cogent*, considered alone and by itself, of all of the " circumstances which, from an examination of the " patent and the record of testimony, must be taken " into the account, before ' an intention to dedi- " cate ' can be *presumed* or a forfeiture of a right " be legally established, on the sound principles of " law."

There are now in being about 200,000 patents, granted prior to Miller *v.* Brass Co.; all of these were granted under the law (and so interpreted by the Courts), which permitted a reissue without regard to the time of application. In all of these, up to Miller *v.* Brass Co., the patentees held a *vested right* to reissue and claim all that had been shown in the original. It is hard to comprehend how a rule of law, or interpretation, first made in 1881, can *retroact*, so as to destroy rights previously vested in patents granted and *accepted* upon the faith of the preceding law and interpretation.

We do not deem it proper to discuss this question save only to suggest it as an overwhelming reason, why, in enforcing the new interpretation, the Court should apply it with the tenderest consideration and the largest liberality.

Then, too, these facts—the very great utility of the invention in controversy, and its use by millions all over the country in individual wells; and its extraordinary value as a new means of supplying *cities* with water (as in Brooklyn, N. Y., where 20,000,000 gallons, have long been supplied daily) call upon the Court with an earnest voice, to be cautious about applying a harsh, technical rule, so as to defeat the claims of a great public benefactor.

New York, Dec., 1886.

J. C. CLAYTON,
of Counsel with Appellees.

Supreme Court of the United States.

No. 120.—October Term, 1886.

Harris Eames,
Appellant,
vs.
William D. Andrews, George H. Andrews, and Nelson W. Green.

Appeal from the Circuit Court of the United States for the District of Connecticut.

[May 23, 1887.]

Mr. Justice Matthews delivered the opinion of the Court.

This is an appeal from the decree of the Circuit Court of the United States for the District of Connecticut upon a bill in equity filed by the appellees to restrain the alleged infringement of reissued letters patent No. 4,372, issued to Nelson W. Green, on May 9, 1871, for an improved method of constructing artesian wells. The original letters patent, No. 73,425, were issued to the patentee January 14, 1868. The defences relied on were that the defendants did not infringe; that the patent was void for want of novelty in the invention; and that the reissued patent was void because it was not for the same invention as that described and claimed in the original patent. The controversy relates to what is commonly known as the "driven well patent."

As one of the defenses is, that the reissued patent is void, as covering more than was described and claimed in the original patent, it becomes necessary to compare the two, and for that purpose they are here printed in parallel columns, the drawings being the same in both:

Specification forming part of Letters Patent No. 73,425, dated January 14, 1868.

ORIGINAL.

Be it known that I, Nelson W. Green, of Cortland, in the county of Cortland, and State of New York, have invented a new and useful improvement in the manner of sinking

Specification forming part of Letters Patent No. 73,425, dated January 14, 1868; Reissue No. 4,372, dated May 9, 1871.

REISSUE.

Be it known that I, Nelson W. Green, of Amherst, in the county of Hampshire, and State of Massachusetts, have invented a new and improved method of constructing

and constructing artesian or driven wells where no rock is to be penetrated, and of raising water therefrom; and I do hereby declare the following to be a full, clear and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Fig. 1 represents a portion of the rod which is driven or forced into the ground to form the opening or hole for the insertion of the tube that forms the casing or lining of the well and the avenue through which the water is raised to or above the surface of the ground, and Fig. 2 represents a portion of the tube.

My invention consists in driving or forcing an iron or a wooden rod with a steel or iron point into the earth until it is projected to or into the water, and then withdrawing the said rod and inserting in its place a tube of metal or wood to the same depth, through which and from which the water may be drawn by any of the usual well known forms of pumps.

artesian wells; and I do hereby declare that the following is a full, clear and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

My invention is particularly intended for the construction of artesian wells in places where no rock is to be penetrated.

The methods of constructing wells previous to this invention were what have been known as "sinking" and "boring," in both of which the hole or opening constituting the well was produced by taking away a portion of the earth or rock through which it was made.

This invention consists in producing the well by driving or forcing down an instrument into the ground until it reaches the water, the hole or opening being thus made by a mere displacement of the earth, which is packed around the instrument and not removed upward from the hole, as it is in boring.

The instrument to be employed in producing such a well, which, to distinguish it from "sunk" or "bored" wells, may be termed a "driven" well, may be any that is capable of sustaining the blows or pressure necessary to drive it into the earth; but I prefer to employ a pointed rod, which, after having been driven or forced down until it reaches the water, I withdraw and replace by a tube made air-tight throughout its length, except at or near its lower end, where I make openings or perforations for the admission of water, and through and from which the water may be drawn by any well known or suitable form of pump.

In certain soils the use of a rod preparatory to the insertion of a tube is unnecessary, as the tube

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

The driving-rod A I construct of wood or iron, or other metal, or of parts of each, with a sharp point, *b*, of steel, or otherwise, to penetrate the earth, and a slight swell, *a*, a short distance above the point, to make the hole slightly larger than the general diameter of the rod. This rod I drive, by a falling weight or other power, into the earth until its point passes sufficiently far into the water to procure the desired supply. I then withdraw the rod and insert in its place the iron or wooden tube B, which may be slightly contracted at its lower end to insure its easy passage to its place. In general, this tube B I make of iron, and of a thickness that will bear a force applied at its upper extremity sufficient to drive or force it to its place; and where a large or continuous flow of water is desired, I perforate this lower end of the tube to admit the water more freely to the inside.

The perforations *c* may be about one-half of an inch in diameter, less or more, and from one to one and a half inches apart; and the perforations may extend, from the bottom of the tube upward, from one to two feet. The diameter of the tube should be somewhat smaller than the diameter of the swell *a* on the drill end of the driving rod A.

itself, through which the water is to be drawn, may be the instrument which produces the well by the act of driving it into the ground to the requisite depth.

To enable others to make and use my invention, I will proceed to describe it with reference to the drawings, in which—

Figure 1 represents a portion of the pointed rod above mentioned, and Fig. 2 a portion of the tube which forms the casing or lining of the well.

The driving-rod A I construct of wood or iron, or other metal, or of parts of each, with a sharp point, *b*, of steel or otherwise, to penetrate the earth, and a slight swell, *a*, a short distance above the point, to make the hole slightly larger than the general diameter of the rod. This rod I drive, by a falling weight or other power, into the earth until its point passes sufficiently far into the water to procure the desired supply. I then withdraw the rod and insert in its place the air-tight iron or wooden tube B, which may be slightly contracted at its lower end to insure its easy passage to its place. In general, this tube B I make of iron, and of a thickness that will bear a force applied at its upper extremity sufficient to drive or force it to its place; and where a large or continuous flow of water is desired, I perforate this tube near its lower end to admit the water more freely to the inside.

The perforations *c* may be about one-half of an inch in diameter, less or more, and from one to one and a half inches apart, and the perforations may extend, from the bottom of the tube upward, from one to two feet. The diameter of the tube should be somewhat smaller than the diameter of the swell *a* on the drill end of the driving rod A.

In localities where the water is near the surfaceof the ground, and the well is for temporary use only, as in the case of a moving army, or for temporary camps, lighter and thinner material than iron may be used for making the tubes—as, for instance, zinc, tin, copper, or sheet metal of other kind, or even wood, may be used. The rod may be of any suitable and practical size that can be readily driven or forced into the ground, and may be from one to three inches in diameter.

Any suitable well known pump may be applied to raise the water up through the tube to the surface or above it.

I am aware of James Suggett's patent of March 29th, 1864, and I disclaim all secured to him therein.

Having thus fully described my invention, what I claim and desire to secure by letters patent, is—

The herein described process of sinking wells where no rock is to be penetrated, viz.: by driving or forcing down a rod to and into the water under ground, and withdrawing it and inserting a tube in its place to draw the water through, substantially as herein described.

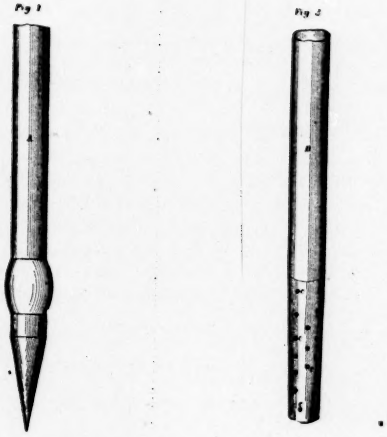
In localities where the water is near the surface of the ground, and the well is for temporary use only, as in the case of a moving army or for temporary camps, lighter and thinner materials than iron may be used for making the tubes—as, for instance, zinc, tin, copper, or sheet metal of other kind, or even wood, may be used.

The rod may be of any suitable and practical size that can be readily driven or forced into the ground, and may be from one to three inches in diameter.

In some cases the water will flow out from the top of the tube without the aid of a pump. In other cases the aid of a pump to draw the water from the well may be necessary. In the latter cases I attach to the tube, by an air tight connection, any known form of pump.

What I claim as my invention, and desire to secure by letters patent, is—

The process of constructing wells by driving or forcing an instrument into the ground until it is projected into the water without removing the earth upward, as it is in boring, substantially as herein described.



The attempts judicially to enforce the rights claimed under this patent have met with determined resistance, and given rise to extensive litigation, in the course of which the original and reissued patents have been subjected to great scrutiny and criticism. The first reported case is that of *Andrews* v. *Carman*, 13 Blatch., 307, decided by Judge Benedict in 1876. That has been followed by *Andrews* v. *Wright*, before Judges Dillon and Nelson, 13 Off. Gaz., 969; *Hine* v. *Wahl*, before Judge Gresham; *Andrews* v. *Cross*, before Mr. Justice Blatchford, then Circuit Judge, 19 Blatch., 294; *Green* v. *French*, before Judge Nixon, 11 Fed. Rep., 591; *Andrews* v. *Creegan*, before Judge Wheeler, 19 Blatch., 113; *Andrews* v. *Long*, before Judge McCrary, 2 McCrary, 577; the present case before Judge Shipman, 15 Fed. Rep., 109; and *Andrews* v. *Cone* and *Andrews* v. *Hovey*, heard before Judges Love, Shiras and Nelson, 5 McCrary, 181. The case of *Hine* v. *Wahl* was argued in this court on appeal at October term, 1882, the decree below being affirmed by a divided court. The patent has been

sustained against all defences made in the cases just mentioned, except in those of *Andrews* v. *Cone* and *Andrews* v. *Hovey*, 5 McCrary, 181, which are now pending on appeal in this court.

The extent of this litigation attests at least the utiliy of the process supposed to be described in the patent, as it shows and measures the extent of the public demand for its use. This is further shown by the statement of one of the complainants in the present cause when examined as a witness, who says that large numbers of wells constructed according to the process described in the patent are in use in the New England States, New York, Pennsylvania, and most of the Western States, as well as in New Jersey, and probably in every State in the Union; and that from estimates made by agents, well drivers, and others having an opportunity of knowledge in the matter, it is believed that the number of driven wells throughout the United States is somewhere between five hundred thousand and a million.

The wells in general use prior to the date of this patent were of two kinds: 1st, the open, common, dug well, usually walled or boarded or otherwise lined, from which the water which collected in the well was usually lifted by means of a bucket and windlass, or by a pump; and 2d, artesian wells, bored frequently to a great depth by means of drills, chisels, augers, and other such tools, whereby the opening was made into the earth to the water supply. In both kinds the process used was to make an excavation, removing the material through the opening. It was usual in making artesian bored wells to drive down a wooden or iron pipe, open at both ends, having a sharp edge around the circumference of its lower extremity, the earth being taken out from within it. As the driving proceeds, and after it reaches the rock, chisels, drills, and other tools are used to disintegrate the rock, which is taken to the surface through the tube so driven. In the latter case, the tube is inserted into the hole bored for the purpose of preventing the caving in of the sides of the opening. Through that tube the water is drawn, if necessary, by a pump, or otherwise flows in consequence of pressure from the head.

The manner in which the water is obtained and supplied, by means of these two descriptions of wells, is thus stated, as we suppose correctly, by an expert witness in this case. He says:

"Water is supplied to open dug-wells only by the force of gravity, and, when the water is pumped from them by the ordinary suction pump, the pressure of the atmosphere is the same on the surface of the water in the well as it is upon the water in the earth surrounding it, and the result is, that the water in the well itself, being in free space, is more readily forced by the pressure of the atmosphere into the suction pipe of the pump than the surrounding water, which is retarded by friction through the earth, and in consequence the continued operation of the pump soon exhausts the water in the well, which supply can only be replenished by the action of gravity, the pressure of the atmosphere to retard its flow into the well being equal to and counterbalancing the pressure exerted by the atmosphere upon the surface of the water in the earth, and the operation of the pump has no effect upon the water in the surrounding earth to force it into the well; hence the supply to the open dug well is due to and produced only by the action of gravity.

"In the artesian well the same principles govern in regard to the means of supply, when they are not flowing wells, but in consequence of such wells being usually inserted down into rock or like substance until they meet with open fissures in the rock, through which water flows more freely and readily than it does through ordinary compacted earth, sand, &c., which form the water-bearing strata above the rock, a much larger quantity of water is obtained therefrom in proportion to their diameter than is usually obtained from the dug well, unless, as in some cases, the dug wells are carried down into a rock stratum and strike a similar seam in the rock. When artesian wells are flowing wells, the generally received opinion is, that their supply of water comes from a water-bearing stratum lying beneath a stratum practically impervious to water, but which lower stratum extends beyond and crops out at the surface of the earth at a greater or less distance from the well itself, (often many miles away,) and at a considerably higher elevation than the surface of the earth at the well."

The same witness describes the invention, which he supposes to be embodied in the driven well and covered by the patent in suit, as follows:

"I understand the invention to be founded upon the discovery by Col. Green, that if a pipe which is air-tight throughout its length, except at its upper end and at or near its lower end, where are openings for the admission of water, be inserted into the earth, down and into a water-bearing stratum, the pipe within the water-bearing stratum being surrounded and in close contact with the earth, and having a pump of any ordinary construction attached by an air-tight connection to its upper end, thus forming a well, air-tight from its upper end, into and below the surface of the water in the earth, that upon operating the pump so attached and removing the pressure of the atmosphere from the well, the pressure of the atmosphere through the earth upon the surface of the water within the earth would force the water into the body of the well with a velocity due to the pressure of the atmosphere, and that the supply of the water to the well directly from the earth surrounding it would be continuous and lasting, so long as water was contained in the stratum of earth with which the lower end of the pipe was in communication, and that the water contained in that stratum could be made directly tributary to the well without regard to the distance to which said water-bearing stratum might extend. In other words, that unlike the previously known open wells, either dug or bored, into which the water from the surrounding earth was forced by the action of gravity alone, he could control the delivery of water to a well by this pressure of the atmosphere, which he discovered acted as effectually, through the earth, to force water from the earth into a well from which the pressure of the atmosphere had been removed, as if no earth existed above the surface of the water.

"To utilize this discovery he proposed a method of making a well by simply driving a tube down through the earth into a water-bearing stratum, by which means he secured a close contact of the lower end of his tube with the earth of the water-bearing stratum."

The differences between the wells previously in common use and the driven wells are stated by the same witness as follows:

"The distinguishing characteristics of a driven well, as it differs from the dug well, is, that when the pressure is relieved from the interior of

the tube which itself forms the body of the well, not only does the force of gravity act to supply it with water directly from the earth, but there being no intervening body of water between the wall of the well itself and the earth surrounding it, upon which the atmosphere can act directly and with greater effect to force it into the well, (as it can and does in the open well), the water is supplied directly to it from the earth surrounding it in a direct inverse ratio to its distance from the well, and the friction of the water through the earth being directly as the square of its velocity, as the distance from the well increases the water moves very much slower than it does immediately next to the well itself; but the area of the source of supply being increased exactly in the ratio of the square of its distance from the well, and the friction being increased exactly as the square of the velocity (in any given stratum), the one exactly counterbalancing the other, it follows that, from natural laws, the surface of the water in the earth surrounding the well is and must be maintained practically at a given level; whereas, in the open well, supplied by gravity only, the water in the earth inclines from the natural surface of the stratum in the earth to the bottom of the well, the angle of that decline decreasing as the supply is taken from the well, and, unless pumping is stopped and time allowed for a resupply, the lowering of the water in the earth extends to a continually increasing distance and a longer time is required to obtain the original quantity in the well, while the supply to the driven well is continuous and steady and practically inexhaustible, the supply in a given time being proportioned in any given soil to the size of the pipe forming the well, having openings proportionate to its size, different wells varying in the supply according to the nature of the soil in which they are inserted, but remaining virtually constant at all times in the same soil. It is not claimed, nor is it a fact, that water can be pumped from a driven well, in any given stratum, with greater ease than from an open well sunk into the same stratum, but the greater advantages are that a much larger and more extended supply of water is controlled, and, in consequence of the passage of the water through the earth, under the pressure of the atmosphere, a constant filtration is secured, thus securing both a greater supply and better water. And where large and continuous supplies are obtained by unintermitted pumping, for days and weeks at a time, experience has shown that the quantity of water has gradually but perceptibly improved, as in the case of the wells at Bellville, heretofore mentioned, where an amount of water is emptied largely exceeding the rainfall upon the entire territory not shut out from the valley by outcropping rocks upon three sides and open to salt water upon the fourth, and no practical diminution of the height of the water is observed.

"One peculiar characteristic of a driven well, as distinguished from the bored artesian well, is that the driven well is for use in soil where no rock is to be penetrated, and where the pressure of the atmosphere is free to act upon the surface of the water in the earth surrounding it; while the artesian well is usually, if not always, bored into a rock stratum, and is supplied with water through fissures in the rock instead of through the earth itself surrounding the entrance or opening to the well."

In describing the mode of constructing a driven well under the patent, the same witness states that the pipes in general use, which are driven into the ground, have openings for the admission of water into them near

the lower end, usually extending up around the sides of the pipe from fifteen inches, sometimes up to several feet. These holes are about three-eighths of an inch square, over which, upon raised rings, is placed a screen of perforated brass, having openings of a size giving from one hundred and fifty to three hundred to the square inch. When the pump is first applied to such a pipe, a small amount of mud or sand is at first usually brought up, coming from a greater or less distance from the outside of the tube, but not leaving an open space around the perforations, as these are not large enough to admit of but the smaller particles near the tube. It leaves interstices between the coarser particles in it, and through which the water flows, and which are constantly filled with water. The swell on the point of a driven well tube, shown in the drawing and marked *a*, is made larger in diameter than the tube itself, or the coupling to the tube, for the reason, as stated, that there is a certain elasticity in the soil, which, after driving a certain sized instrument into it, causes the hole to contract after the point passes, and it was thus found necessary to make the point somewhat larger than even the couplings of the pipe, for the purpose of partially relieving the pipe and couplings from the great friction resulting from their passage through the hole thus contracted. After reaching a water-bearing stratum of the earth, the earth at once settles around the point and tube, even more rapidly and effectually than it does above the water stratum, and the hole made by driving an instrument into a water-bearing stratum and withdrawing it will remain intact but a very short time unless that stratum is composed of gravel and similar substances, thus leaving the entrance to the pipe in close contact with the earth and effectually protecting the entrance from the admission of air or free water standing between the pipe and the earth surrounding it. The effect, therefore, of this feature of the tube is more effectually to make air-tight the point or lower part of the tube.

The scientific theory stated by the expert witness on behalf of the complainants, as an explanation of the principle according to which the patented process operates in furnishing a supply of water by means of a driven well, is not contradicted or qualified by any opposing testimony, and, so far as we can know, is not inconsistent with accepted scientific knowledge. The general introduction and use of driven wells since the date of the patent, both in this country and abroad, strongly corroborates the supposition that their construction and operation is based upon the application of some natural force not previously known or used. It appears from the evidence in this cause, that the process of making driven wells was subjected to experimental tests by the best authorities in England, and found so successful that it was used to great advantage in the supply of water to British troops in the Abyssinian expedition under General Napier, in 1867.

In view of these premises, Judge Benedict, in *Andrews* v. *Carman*, 13 Blatch., 307, construed the patent in suit according to the following extracts from his opinion in that case: "The difference between the new process under consideration and the old is, that the pressure of the atmosphere, which, in the ordinary well, operates at the sides and bottom of the well pit to maintain an equally distributed atmospheric pressure upon the water, whereby the flow of water into the well is made dependent upon

the force of gravity, in the new process is removed from within the well pit, and ceases there to operate against the inward flow of water, so that the pressure of the atmosphere operates with its full power to force the water in the earth from the earth into the well pit, and without any opposition caused by meeting, in its flow, the pressure of the atmosphere at the sides or bottom of the pit. This process involves a new idea, which was put to practical use when the method was devised of fitting tightly in the earth, by the act of driving without removing the earth upwards, a tube open at both ends, but otherwise air tight, and extending down to a water-bearing stratum, to which is attached a pump, a vacuum in the well pit, and at the same time in the water bearing stratum of the earth, being necessarily created by the operation of a pump attached to a pipe so driven.

* * * * * * * *

"The novelty of the process under consideration does not lie in a mechanical device for sinking the shaft or raising the water to the surface, but in the method whereby water, by the use of artificial power, is made to move with increased rapidity from the earth into the shaft, whence it results, that a tube but a few inches in diameter, driven down tightly to a water bearing stratum of the earth, affords an abundant supply of water to a pump attached thereto, and constitutes a practical and productive well. Such an invention is without the field of mechanical contrivance, It consists in the new application of a power of nature, by which new application a new and useful result is attained. There is no new product, but an old product—water—is obtained from the earth in a new and advantageous manner."

* * * * * * * *

"In the specification we find stated more clearly the distinguishing feature of the process, wherein it differs from any process before adopted for procuring a supply of water from the earth; for the specification says tha an instrument is to be driven into the ground until it reaches water, having the earth tightly packed around it. It is by means of this packing of the earth tightly around the tube that the force developed by the creating of the vacuum in the well pit is brought to bear directly upon the water lying in the water-bearing stratum, to force it into the well pit; and this driven tube forms the well pit of the new invention, for, as stated, it is to be a tube made air-tight throughout its length, except at its lower end, where are to be perforations for the admission of water, and through and from which the water may be drawn by a pump. The specification also mentions the vacuum, and points out where it is to be created, for a vacuum must of necessity be formed in the well pit and in the water-bearing stratum, by operating a pump attached to such a tube, so driven into the earth."

* * * * * * * * *

"I therefore understand this patent to be a patent for a process, and that the element of novelty in this process consists in the driving of a tube tightly into the earth, without removing the earth upwards, to serve as a well pit, and attaching thereto a pump, which process puts to practical use the new principle of forcing the water in the water-bearing strata of the earth from the earth into a well pit, by the use of artificial power applied to create a vacuum, in the manner described."

Assuming this construction of the patent to be correct, it is, however, now contended on behalf of the appellant that the reissue is void because the invention described in it is not contained in the original patent.

It is to be observed that the scientific theory and principle, the application of which is supposed to constitute the invention of Col. Green are not set forth either in the original or reissued patents. This feature was commented upon by Mr. Justice Blatchford in *Andrews* v. *Cross*, 19 Blatch., 294, 305, as follows: "It may be that the inventor did not know what the scientific principle was, or that, knowing it, he omitted, from accident or design to set it forth. That does not vitiate the patent. He sets forth the process or mode of operation which ends in the result, and the means for working out the process or mode of operation. The principle referred to is only the why and the wherefore. That is not required to be set forth. Under § 26 of the act of July 8th, 1870 (16 U. S. Stat. at Large, 201), under which this reissue was granted, the specification contains a description of the invention and of 'the manner and process of making, constructing, compounding, and using it,' in such terms as to enable any person skilled in the art to which it appertains to make, construct, compound, and use it; and, even regarding the case as one of a machine, the specification explains the principle of the machine, within the meaning of that section, although the scientific or physical principle on which the process acts when the pump is used with the air-tight tube, is not explained. An inventor may be ignorant of the scientific principle, or he may think he knows it and yet be uncertain, or he may be confident as to what it is and others may think differently. All this is immaterial, if by the specification the thing to be done is so set forth that it can be reproduced."

The particulars relied on to establish the proposition that the reissued patent describes a different invention from that contained in the original are as follows: 1st. It is said that it is essential to the success of the process that the end of the tube should form an air-tight connection with the surrounding earth; that the tube itself should be air-tight, and attached to a pump with an air-tight connection; which elements are set out in the reissued patent, and are not contained in the original.

Upon this point, speaking of the original patent, Judge Shiras, in the Circuit Court for the Southern District of Iowa, in *Andrews* v. *Hovey*, 5 McCrary, 195, said: "He describes a driving-rod, having a swell thereon, which is to be driven into the ground and then withdrawn, and a tube of a diameter somewhat smaller than the diameter of the swell of the drill-rod is to be inserted in the hole thus made. In no part of the description is it said, either expressly or by fair implication, that the tube, when inserted, must fit so closely into the opening made by the rod that no air can pass *down on the outside of the tube to the water*, nor is it stated that the pump must be attached by an air-tight connection to the top of the tube. A person can follow with exactness all the instructions therein given, and yet it would not necessarily follow that he had excluded the air from the lining of the well, or from the water-bearing stratum at the place where the tube penetrated the same. In other words, the description of the means to be employed, as set forth in these specifications, does not show that one of the results arrived at is to render the lining of the well air-tight, and to have attached thereto a pump by an air-tight connection. The description of the means to be employed can be carried out in practice

without making an air-tight lining or tube, and hence without forming a vacuum around the bottom of the tube or in it. This being true, it follows that it cannot, from the description of the means employed, be inferred that Col. Green then intended to claim, as part of his discovery or invention, the application of the principle that by creating a vacuum in and about the tube, the same having been made air-tight, the flow of water would be largely increased. He did not claim it in express words, and the description of his invention, and the means to be used in carrying the same into practical use, fail to show that such was the main or even a necessary part of his invention."

To this view there are two sufficient answers.

1st. We think it is a reasonable inference, from the language employed in the specification of the original patent, that the tube, in the act of being driven into the earth, to and into a water-bearing stratum, would form an air-tight connection with the surrounding earth, and that the pump should be attached by an air-tight connection. This inference reasonably follows from the fact, shown in the evidence, that the mere act of driving the tube, as distinguished from boring, usually results in making an air-tight connection with the surrounding earth. The necessary effect of driving the tube is to displace the earth laterally by compressing it; and the elasticity of the earth is such as to cause it to cling and contract around the tube so as to exclude the air, so that any one following the directions in the specification of the original patent would in fact usually so drive the tube as to make the necessary air-tight connection, whether he consciously intended to do so or not. As the object of applying a pump to the upper orifice of the tube was to draw the water flowing into its lower end, it would equally follow, as a matter of common knowledge, both that the tube itself should be air-tight, and that it should be attached to the pump with an air-tight connection, because a vacuum in the tube is necessary to raise the water in all cases where it does not flow out in consequence of the superior height of its source, and the consequent pressure of the head.

The precise objection to the reissued specification is, that it states that the tube which is to replace the driven rod is "made air-tight throughout its length," and also that in cases where the aid of a pump to draw the water from the well may be necessary, the patentee attaches "to the tube by an air-tight connection any known form of pump;" and that the original specification does not state that the tube is made air-tight throughout its length, nor that the pump is to be attached to the tube by an air-tight connection, but only states that "any suitable well known pump may be applied to raise the water up through the tube to the surface or above it."

It appears, however, in evidence, that the patentee, when applying for his reissue, with the text of the specification reading as it does now, applied to have granted to him a second claim in these words: "I also claim in combination with a tube driven well, an attachment of a pump to the tube by an air-tight connection substantially as herein set forth;" that the Patent Office rejected this second claim, assigning its reasons in these words: "The second clause is for a pump attached to a tube by an air-tight connection. This is indispensable to the operation of a pump, and a universal right. Whenever a supply of water is found, a pump may be applied without new invention;" that, in a subsequent communication

by the Patent Office to the patentee, the office, in speaking of this proposed second claim, said: "This device is of universal use in artesian well tubes and other connections, and is a necessity in the relation of pumps to well tubes;" and that the patentee afterwards withdrew the proposed second claim.

As the air-tight connection was indispensable to the operation of a pump, *it was implied of necessity* in the original specification, as much so as if it had been expressed, and there was no enlargement of the invention in stating the fact in the reissued specification.

In view of all this, it is also fairly to be implied, from the entire language of the original specification, that the tube was intended to be air-tight throughout its length. As that specification states that the water is to be raised up through the tube to the surface by the pump, and as an air-tight connection at the junction of the pump with the tube was "indispensable to the operation of the pump," so it was equally a necessity to the perfect operation of the apparatus that the tube should be air-tight throughout its length, these facts being both of them common knowledge in the art.

2d. But even is this were not so, the case would be simply that of a specification defective for not containing a full and perfect description of the process intended to be patented. It presents the very case of the right secured to a patentee by section 53 of the act of July 8, 1870, which provides, "that whenever any patent is inoperative or invalid by reason of a defective or insufficient specification, * * * if the error has arisen by inadvertence, accident, or mistake, and without any fraudulent or deceptive intention, the Commissioner shall, on the surrender of such patent and the payment of the duty required by law, cause a new patent for the same invention, and in accordance with the corrected specification, to be issued to the patentee, etc.

If the amended specification does not enlarge the scope of the patent by extending the claim so as to cover more than was embraced in the original, and thus cause the patent to include an invention not within the original, the rights of the public are not thereby narrowed, and the case is within the remedy intended by the statute. *Those cases in which this Court has held reissues to be invalid were of a different character*, and were cases where by the reissued patent the scope of the original was so enlarged as to cover and claim as a new invention that which was either not in the original specification, as a part of the invention described, or, if described, was, by not being claimed, virtually abandoned and dedicated to public use.

Such is not the present case. Here the amended specification does not enlarge the scope of the original invention as described in the original specification. It simply, in this respect, supplies a deficiency, by describing with more particularity and exactness the means to be employed to produce the desired result. It is thus said, in the specification of the reissued patent, that "this invention consists in producing the well by driving or forcing down an instrument into the ground, until it reaches the water, the hole or opening being thus made by a mere displacement of the earth, which is packed around the instrument, and not removed upward from the hole as it is in boring;" and "I prefer to employ a pointed rod, which, after having been driven or forced down until it reaches the water,

I withdraw, and replace by a tube made air-tight throughout its length, except at or near its lower end, where I make openings or perforations for the admission of water, and through and from which the water may be drawn by any well known or suitable form of pump;" and "in certain soils the use of a rod preparatory to the insertion of a tube is unnecessary, as the tube itself, through which the water is to be drawn, may be the instrument which produces the well by the act of driving it into the ground to the requisite depth;" and "in some cases the water will flow out from the top of the tube without the aid of a pump. In other cases, the aid of a pump to draw the water from the well may be necessary. In the latter cases, I attach to the tube, by an air tight connection, any known form of pump."

There is nothing in these additions and amendments which either was not virtually contained *by reasonable implication in the original description, or, if new, amounted to more than specific and exact directions to supplement those contained in the original.* The invention is not differently described, and is not described so as to be a different invention, nor is the claim enlarged.

In the second place, however, under this head, a material alteration from the original, in the amended specification, is said to have been made in the following respect: The original specification starts out with a declaration that the patentee has "invented a new and useful improvement in the manner of sinking and constructing artesian or driven wells, where no rock is to be penetrated, and of raising water therefrom;" and the claim is stated to be "the herein described process of sinking wells where no rock is to be penetrated," etc. In the specification of the reissued patent, he says: "My invention is particularly intended for the construction of artesian wells in places where no rock is to be penetrated;" and the claim is for "the process of constructing wells by driving or forcing an instrument into the ground until it is projected into the water, without removing the earth upward, as it is in boring, substantially as herein de-described;" from which it will be observed, are omitted the words *"where no rock is to be penetrated."*

It is, therefore, contended, that the effect of this amendment to the specification and claim is to enlarge the scope of the patent, so as to cover by the reissued patent the process of constructing driven wells, whether rock is to be penetrated or not, while the original patent was expressly limited to cases where no rock was to be penetrated. We do not, however, so understand either the reason or the effect of these amendments. It is perfectly evident, from the nature and description of the invention, that a driven well cannot be made where, through its whole course, the formation is rock, or where the supply of water to be utilized is found in the fissure of a rock formation. *This is so for the reason that the tube cannot be driven through rock.* Rock must be bored by drills, augers, chisels, and other similar instruments for perforating it and withdrawing the comminuted particles. So, where the supply of water which must be utilized consists of a flowing stream, or a pool, found in a rock formation, the point of the driven rod or tube cannot be inserted by driving, as described in the patent so as to form the air-tight connection necessary to the successful operation of the principle on which the process of the patent depends. Therefore, it follows from the amended specification and the claim of

the reissued patent, by the necessity of the case, as expressly declared in the original, that a driven well cannot be constructed in a rock formation.

On the other hand, it does not follow, either from the amended or the original patent, that a driven well, according to the process described, may not be constructed and operated, notwithstanding in its construction some rock has to be penetrated. There may be a layer of rock on the surface; when this is removed or cut through, a driven well may then be constructed in the space thus uncovered from the obstruction. So, if a stratum of rock is met in the course of driving the rod or tube, that layer may be penetrated, not by driving the rod or tube through it, but by other usual means of boring and drilling. After it is passed, the rod or tube having been inserted in the opening made through the rock, may then be driven in the usual manner through the remainder of its course until it reaches a water-bearing stratum of earth, as if no rock had been met in its passage.

The object and purpose of the amendments to the specification obviously were to meet a possible construction of the original, whereby the patentee would be precluded from the use of his process where it was evidently intended to be applied, simply because one or more strata of rock had to be penetrated in the process of driving. Such, in our opinion, is not the meaning of the original patent. *Its true meaning is, that, so far as it may be necessary to penetrate a rock in the course of constructing a well, the process of driving cannot be used to overcome the obstacle presented by the rock, but that otherwise the tube may be driven until it reaches the proper supply of water, and then operate as a driven well.* The only effect of the amendments contained in the new specification and claim is to make that intention clear. So far as, in the course of constructing a well, rock must be penetrated, the driven well process cannot be used in the perforation of the rock, but in every other part of its course it may be applied. Such, in our judgment, is the legal effect of both the original and the reissued patents.

In our opinion, therefore, the grounds on which it is sought to invalidate the reissued patent, as being for a different invention from that described in the original, cannot be sustained.

This conclusion is not in conflict with anything said in *Russell* v. *Dodge*, 93 U. S. 460. Mr. Justice Field, in delivering the opinion of the Court in that case, referring to the provisions of the statutes in reference to reissues, said: "According to these provisions a reissue could only be had where the original patent was inoperative or invalid, by reason of a defective or insufficient description or specification, or where the claim of the patentee exceeded his right, and then only in case the error committed had arisen from the causes stated. And as a reissue could only be granted for the same invention embraced by the original patent, the specification could not be substantially changed, either by the addition of new matter or the omission of important particulars, so as to enlarge the scope of the invention as originally claimed. A defective specification could be rendered more definite and certain so as to embrace the claim made, or the claim could be so modified as to correspond with the specification; but, except under special circumstances, such as occurred in the case of *Lockwood* v. *Morey*, 8 Wall., 230, *where the inventor was induced to limit his claim by*

the mistake of the Commissioner of Patents, this was the extent to which the operation of the original patent could be changed by the reissue. The object of the law was to enable patentees to remedy accidental mistakes, and the law was perverted when any other end was secured by the reissue." And this is in harmony with all that has since been said by this Court on the subject of reissued patents.

It is further contended on the part of the appellant that the reissued patent in suit is void for want of novelty:

1. Under this head, it is first alleged that it is anticipated by a patent granted to James Suggett, March 29, 1864. In the specification of the original patent of Green of January 14, 1868, he says: "I am aware of James Suggett's patent of March 29, 1864, and I disclaim all secured to him therein." The reissued patent omits that disclaimer. After the application for the original patent, as appears by the contents of the file wrapper, an interference was declared, to which the parties were Byron Mudge, for a reissue of his patent for a mode of constructing wells, and the above named patent of James Suggett, for putting down and operating bored wells, and the application of Col. Green. The matter was carried by appeal from the decision of the Commissioner of Patents to the Supreme Court of the District of Columbia. The judgment of that Court was, that Suggett was entitled to priority of invention in regard to what was claimed by him in his patent, and that Col. Green was also entitled to have a patent issued to him according to his amended specification. The decision of the judge of the Supreme Court of the District of Columbia says: "I am clearly of opinion that Green first put into practice the conception of making a driven well, and is entitled, therefore, to his patent for the broad claim of sinking wells by driving down the pump or rod without removing the dirt upward, and that Suggett was entitled to a patent for the perforated pipe and point for sinking wells, and I therefore affirm the decision of the Commissioner." Suggett's patent, on the face of his specification, is for a "new and improved method of putting down and operating bored wells," and all that his claim covers is the apparatus consisting of the perforated pipe with a pointed end, constructed as a drill, and united with a pump. The subjects of the two patents are quite different, and do not necessarily conflict, even on the supposition that Suggett's patent is in force, although, as testified in this case, it has been judicially declared to be invalid for want of novelty.

2. An anticipation of the driven-well patent is also alleged by reason of an English patent granted to John Goode, August 20, 1823. That patent, however, like that of Suggett's, does not profess to be a patent for a process of raising water from the earth by means of wells of any particular construction or mode of operation, but merely for "certain tools of various formation for the purpose of boring the earth, and certain apparatus for the purpose of raising water," which the patentee says "constitute my certain improvements as aforesaid."

3. It is further contended that the driven-well patent is anticipated by having been previously described in numerous printed publications. Of these there were introduced in evidence in this cause by the appellant those enumerated in the following list:

1. An extract from vol. 4, "Repertory of Patent Inventions," published in London in 1827, by T. & G. Underwood, page 113, which, however,

merely contains a detailed descripton of the machinery, tools, and apparatus for boring the earth, described in John Goode's patent of August 20, 1823.

2. Extract from "Dictionary of Arts, Manufactures, and Mines," by Andrew Ure, published in New York in 1847, by D. Appleton & Co., page 63, under the head of "Artesian Wells."

3. Extract from page 388 of "MacKenzie's 5,000 Receipts in All the Useful and Domestic Arts," first published in 1840.

4. Extract from "Rees' Cyclopædia," vol. 40, published at Philadelphia, by Samuel F. Bradford, about 1819, title "Well in Rural Economy."

5. Extract from "Journal of the Franklin Institute," third series, published at Philadelphia, by the Franklin Institute, in 1844, vol. 7, page 128.

6. Extract from "Brande's Encyclopædia, or Dictionary of Science, Literature and Art," published by Harper Bros., New York, in 1843, vol. 3, page 1333, under article "Well."

7. Extract from "Rees' Cyclopædia," vol. 33, title "Spring Draining Pump."

8. Extract from "London Encyclopædia," published by Thomas Tegg, London, 1829, vol. 22, page 593.

9. Extract from "Mechanics' Magazine," published by Knight & Lacey, London, 1824, vol. 2, pages 15 and 16.

10. Extract from "Harper'sNew Monthly Magazine," September, 1851, page 540.

11. Extract from "De L'Art du Fontenier Sondeur et des Puits Artesiens," published in Paris, France, in 1822, page 99, sec. 79.

12. Extract from "Bulletin du Musée de l'Industrie," published by De Mot et Cie, Bruxelles, 1846, tome 10, page 163.

13. Extract from "Hericart de Thury, Jaillissement des Eaux," published by Bachelier, Paris, France, 1829, pages 274–275.

14. Extract from "F. Arago, Oeuvres," tome 6, by Gide et J. Baudry, Paris and Leipzig, by J. O. Weigel, 1856, page 457.

15. Extract from "F. Garnier, Traite sur les Puits Artesiens," published by Bachelier, Paris, France, 1826, page 207.

16. Extract from "The Encyclopædia of Domestic Economy," published in New York in 1849, by Harper Bros., page 848.

The rule governing defences alleging the invalidity of the patent by reason of prior printed publications was stated by Mr. Justice Clifford in *Seymour* v. *Osborne*, 11 Wallace, 516, 555, in this language: "Patented inventions cannot be superseded by the mere introduction of a foreign publication of the kind, though of prior date, unless the description and drawings contain and exhibit a substantial representation of the patented improvement, in such full, clear, and exact terms as to enable any person skilled in the art or science to which it appertains to make, construct, and practice the invention to the same practical extent as they would be enabled to do if the information was derived from a prior patent. Mere vague and general representations will not support such a defence, as the knowledge supposed to be derived from the publications must be sufficient to enable those skilled in the art or science to understand the nature and operation of the invention, and to carry it into practical use. Whatever may be the particular circumstances under which the publication takes

place, the account published, to be of any effect to support such a defence, must be an account of a complete and operate invention, capable of being put into practical operation."

The same rule was repeated by Mr. Justice Strong in the opinion of the Court in *Cohn* v. *The U. S. Corset Co.*, 93 U. S., 366, 370, as follows: "It must be admitted that, unless the earlier printed and published description does exhibit the later patented invention in such a full and intelligible manner as to enable persons skilled in the art to which the invention is related to comprehend it without assistance from the patent, or to make it, or repeat the process claimed, it is insufficient to invalidate the patent." This rule was affirmed in *Downton* v. *Yeager Milling Co.*, 108 U. S., 466, 471.

The application of this rule to the publications relied upon in the present case shows that none of them can properly be said to anticipate the invention of the driven well. It would serve no useful purpose specially to notice in this opinion all the publications mentioned in the record. A few, as samples most relied on, will be considered.

The first is the extract from McKenzie's 5,000 Receipts. It appears, from the file wrapper in the matter of the reissued letters patent in suit, that the application was rejected at first by the examiner in the Patent Office on reference to this extract, which is as follows: "To raise water in all situations. The finest springs may be found by boring, which is performed in the simplest manner by the mere use of an iron rod forced into the earth by a windlass. The workmen in a few days get to a genuine spring of pure water, fit for every purpose. After the water is found they merely put the tin pipes down the aperture, and it preserves a fine stream which sometimes rises from four to five feet high." It is quite obvious that this has no relation whatever to the process of obtaining water by means of driven wells. It is nothing more than a simple process of finding water in the usual way, as in the case of an ordinary dug or bored well, such as have been immemorially used.

The same observation equally applies to the extract from Rees' Cyclopædia, under the title of "Wells in Rural Economy," which is as follows: "The most ingenious of these is that proposed by a French philosopher, who has advised that the ground should be perforated to a sufficient depth by means of an auger or borer; a cylindrical wooden pipe being then placed in the hole and driven downward with a mallet, and the boring continued, that the pipe may be forced down to a greater depth, so as to reach the water or spring. In proportion as the borer becomes filled with earth it should be drawn up and cleared, when, by adding fresh portions of pipe, the boring may be carried to much extent under ground, so that water may in most cases be thus reached and obtained. It is stated that wells made in this manner are superior to those constructed in the common method, not only in point of cheapness, but also by affording a more certain and abundant supply of water, while no accident can possibly happen to the workmen employed. In case the water near the surface should not be of a good quality, the perforation may be continued to a still greater depth till a purer fluid can be procured; and when wells have become impure or tainted from any circumstance or accident, when previously emptied, and the bottom perforated in a similar manner, so as to reach the lower sheet of water, it will rise in the cylindrical tube in a

pure state into the body of the pump fixed for the purpose of bringing it up."

The extract from "Brande's Encyclopædia," under the article "Well," is as follows: "The use of the borer alone may procure an adequate supply of water in particular situations. This mode appears to have been long resorted to in this and other countries. From what we have already stated as to the disposition of strata, the conditions requisite for its success will be readily conceived, viz., watery strata connected with others on a higher level. The pressure of the water contained in the higher parts of such strata on that in the lower will readily force up the latter through any orifice, however small. All that is necessary, therefore, is to bore down to the stratum containing the water, and, having completed the bore, to insert a pipe into the bore, which may either be left to overflow into a cistern, or it may terminate in a pump."

A similar one from the Mechanics' Magazine, vol. 2, page 16, is this:

"*Boring Wells.*

"Answer to question.

"LEEDS, *March* 15, 1824.

"Drive a cast iron pipe through the gravel—*i. e.*, by means of a weight hung at the end of spring pole, used in boring; and should the pipe meet with any loose stone to obstruct its passage, put the boring rods into the pipe, and bore until the stone is broken to pieces or driven sideways, then drive the pipe as before. I have had the management of a great many bore holes for water in this neighborhood, some above 100 yards deep, and many contrivances I have used on account of difficulties met with in different strata. I shall be happy to give your correspondent every information in my power on the subject, and, if agreeable to you, will send a list of a few holes, stating the different strata gone through and the several springs of water met with.

Yours, etc., T. T.

"N. B.—The shell-borer must be used at times to bring out the gravel that gets into the pipe, and the pipe must have spigot and faucet joints."

There is nothing in these extracts to suggest the peculiarities which distinguished the driven well as described in the reissued patent, and it may be said, in general, of all the extracts contained in the record, including these, that, so far as they undertake to describe anything in actual and practical use, they point merely to the ordinary bored artesian well, or the instruments and implements to be used in its construction.

This view of these publications is strongly corroborated by the circumstances attending the introduction of Green's process of driven wells into public use in England. It is shown that his agent for the introduction of the well into that country, and to whom the invention was sold, James L. Norton, took out in his own name an English patent, and, as has already been stated, and as is shown in the proof, after various experimental tests made by civil and military engineers of high authority, the driven well according to this process was adopted and successfully employed for the purpose of obtaining a water supply for the British troops in the Abyssinian expedition. The present record contains extracts from standard scientific publications in England showing how extensively and successfully the driven well has, since its first introduction, been employed in England for the purpose of rising water, in which it is admitted, as the facts show, that the process was considered new, differing in substance

from any previous known and in use, and ascribed to the American invention.

The next defence relied upon by the appellant is, that the evidence fails to establish a case of infringement. It is not important to set out fully the evidence on this point; the substance of it is contained in the opinion of Judge Shipman in this case, 15 Fed. Rep., 109. In reference to it, the Court says: "The defendant's counsel strenuously urge that these wells were constructed by boring; that the wells were bored until water was struck—that is, until a supply of water was obtained; and that the wells were finished by pressing the pipes more deeply into the source of supply which had been reached when the workmen 'struck water.' In other words, the defendant seeks to bring the case within the decision of Judge McCrary in *Andrews* v. *Long*, 12 Fed. Rep., 871. In this case, however, the witnesses, when they used the common expression 'struck water,' did not mean that they had reached an adequate source of supply for a well, but that they had reached a place where the presence of water manifested itself, and where by continuous excavation an adequate supply would be obtained. The wet sand or wet clay upon the auger showed that water was at hand. The well was then finished, and a supply of water was obtained by pressing or driving a tube into the ground, without removing the earth upward, and attaching thereto a pump. When this was done, there was put 'to practical use the new principle of forcing the water in the water-bearing strata of the earth from the earth into a well pit, by the use of artificial power applied to create a vacuum in the water-bearing strata of the earth, and at the same time in the well pit.' *Andrews* v. *Cross*, 8 Fed. Rep., 269."

In other words, the case of the appellant is this: He sought to evade the patent by boring instead of driving until he came to the water-bearing stratum. Then, in order to avail himself of the patent, he drove the tube downward into the water-bearing stratum, so as to secure those conditions of an air-tight connection between the point of the tube and the surrounding earth, which constitute the principle of the driven well patent. It is, therefore, a clear case of infringement.

The decree of the Circuit Court is accordingly affirmed.

Dissenting, Justices BRADLEY, FIELD and GRAY.

True copy.

Test:

JAMES H. McKENNEY,
Clerk Supreme Court, U. S.

Counsel for Appellant,
CHARLES R. INGERSOLL.

Counsel for Appellees,
JOS. C. CLAYTON,
A. Q. KEASBEY.

[No. 142.]

Supreme Court of the United States.

No. 1320.—October Term, 1886.

A. T. Beedle,
Appellant,
vs.
Frank O. Bennet, Amelia H. Bennet and Henry B. Bennet.

Appeal from the Circuit Court of the United States for the Northern District of Ohio.

[May 23, 1887.]

Mr. Justice Matthews delivered the opinion of the Court.

This is a bill in equity filed by the appellees May 15, 1883, to restrain the alleged infringement of reissued letters-patent No. 4,372, issued to Nelson W. Green, for a driven well. The cause was heard by stipulation between the parties upon an agreed statement of facts set out in the record, as follows:

"For the purpose of saving the expense of taking testimony, it is hereby agreed by and between the parties hereto that the above cause and the others hereinafter referred to may be tried upon the following agreed statement of facts, said statement to be accepted as proof of the facts recited as fully and completely as if the same had been duly and formally proven.

"It is agreed that Nelson W. Green was the patentee of a new and valuable process in the construction of wells, and claimed to be its first and original inventor, for which process he received original letters-patent of the United States, No. 73,425, on the 14th day of January, 1868, and for which reissue letters-patent No. 4,372 were granted to Nelson W. Green on May 9th, 1871, the application for which having been filed February 24th, 1871.

"That the title for the letters-patent sued on for the State of Ohio is in the complainants.

"That the defendants have had in use on their farm for the past seven or eight years one or more driven wells, which wells were put down for the defendants by an ordinary well-driver in the following manner: A tube, of which the lower portion was perforated with small holes and the lower end provided with a point, was driven into the ground until it projected into the water, without removing the earth upwards, as in boring.

"The water then entered the tube through the perforations and was pumped up through the tube by an ordinary pump.

"That the defendants have never driven wells for themselves except

as above described or for other purposes; never have sold or offered for sale driven wells or the materials for driving them, but have simply used their own wells for their personal use on their farms.

"It is agreed that printed copies of the original and reissued letters-patent granted to N. W. Green in 1868 and 1871, Nos. 73,425 and 4,372, respectively, may be offered in evidence at the hearing, and may be accepted as proof with the same force and effect as if formally proven.

"That the said N. W. Green made his alleged invention or discovery as early as 1861, when he put down on his own grounds, at Cortland, New York, the first driven well for the purpose of demonstrating his discovery.

"That he, at the time of his alleged invention, claimed to have made a valuable discovery and to have invented a new process.

"That he then declared an intention to secure his process by letters-patent and expressed his belief that large profits would accrue therefrom.

"That he at that time, having been partly educated at West Point, was engaged in organizing a regiment at Cortland, N. Y., his residence, and was expecting soon to take part in the war of the rebellion.

"That in June, 1861, he put down a well at his house in Cortland, and in October, 1861, he publicly drove a well, in the manner described in his original patent, at the fair grounds near Cortland, for the use of the soldiers in camp, and demonstrated to his own complete satisfaction its success.

"That he gave orders and directions for the construction of proper apparatus for driving such wells, and made arrangements for its transportation with his regiment as it was moved to the seat of war.

"That on the 6th of December, 1861, while in discharge of what seemed to be his duty, he felt compelled to shoot one of the captains of his regiment named McNett; that the shot was not mortal, but inflicted serious injury; that in the then state of the public mind this occasion gave rise to intense public excitement, out of which sprang a controversy of extraordinary bitterness, involving numerous persons and continuing for several years; that the effect upon Green was disastrous in the extreme; that he was suspended from his command, then tried by a court of inquiry at Albany, and reinstated in command; that his regiment, after having, it is said, required the protection of a battery to save it from violence at the hands of evil-disposed people of the country, removed to Washington, where Green was relieved from command, and then dismissed the service, and subjected to military charges.

"That he was, in addition, harassed by civil suits brought to charge him with a personal liability for articles used by his regiment.

"That he was also arrested and then indicted for the shooting of McNett, and after repeated postponements of the trial, effected because of the excited state of the public mind, was tried in 1866, and the jury having disagreed, was discharged.

"That during this period he also became involved in church difficulties arising out of the shooting of McNett; was expelled from the church and compelled to appeal to the bishop, and also became involved in litigation with the pastor of his church.

"That his efforts during this period to secure a reversal of the order dismissing him from the service were constant and absorbing and were

attended with such anxiety of mind as to give rise to the charge that he was insane.

"That this state of things continued up to 1866, during which period he was of necessity often absent from Cortland, at Albany and at Washington, and that he was compelled to devote his entire time to the controversy in which he had become involved, abandoning all other occupation and exhausting all his means.

"That in November, 1865, when Green saw, by an advertisement in the papers, that driven wells were being put down, although he was advised by counsel defending him on the indictment for the shooting of McNett not to apply for a patent, as he would thereby increase the number of his enemies and prejudice him on the trial of the indictment, then about to come on, he nevertheless did then, and in opposition to the advice of his counsel, file his application and assert his right to the invention.

"That the said Green, during this period aforesaid, never declared any intention of abandoning his said discovery and invention, and that, having so made his application as aforesaid, original letters-patent were granted the said N. W. Green, January 14, 1868.

"It is further agreed that whatever order or decree is made in this cause the same shall be made in all the cases pending in this court in which the same parties are complainants, a list of which cases, with the title and number thereof, is hereto attached and made a part of this stipulation.

"It is further admitted that the complainants' price for settling for infringement under the above patent without suit has been ten dollars per well and the recognition of complainants' rights, and that the complainants offered to settle on such terms with these defendants before bringing suit, which offer was refused."

A decree was rendered in favor of the complainants on the 6th day of December, 1886, but, as at that time the patent had expired, no injunction was granted. The amount of the damages awarded was at the rate of $10 for each well used, that being the amount of royalty which the complainants had offered to take before suit brought, and admitted to be the customary price for the same, as a license fee. The defendant prosecutes the present appeal.

As the patent was in force at the time the bill was filed, and the complainants were entitled to a preliminary injunction at that time, the jurisdiction of the court is not defeated by the expiration of the patent by lapse of time before final decree. There is nothing in the case of *Root* v. *Railway Co.*, 105 U. S. 189, to sustain the objection made by the appellant on this account. See also, *Clark* v. *Wooster*, 119 U. S. 322, 325, and cases there cited. All other defenses made in the cause, except that of prior public use and the defendant's infringement, have been passed upon in the case of *Eames* v. *Andrews*, just decided.

In the present case the appellant contends that the patentee publicly used his invention more than two years before he applied for his patent, and thereby forfeited his right to a patent under the law. This defence was raised and considered, upon facts substantially the same, in the case of *Andrews* v. *Carman*, 13 Blatch., 307, and also in the case of *Andrews* v. *Cross*, 19 Blatch., 294. The law governing the subject of the alleged dedication and abandonment by Green of his invention prior to obtaining

his patent is that which was in force prior to November, 1865, when he made his application. By the patent act of 1870, as well as by the Revised Statutes, all rights previously acquired were preserved. The law, therefore, applicable to the question, is to be found in the acts of 1836 and 1839. The act of 1839, as has repeatedly been held, has no effect to invalidate a patent, unless there be proof of abandonment, or of a use of the invention for more than two years prior to the application for the patent. The only facts from which such an abandonment or dedication can be inferred are, that Green, in June, 1861, put down a well at his house in Cortland, New York; that in October, 1861, he publicly drove a well, in the manner described in his original patent, at the fair grounds near Cortland, for the use of the soldiers in camp, and demonstrated to his complete satisfaction its success; and that he gave orders and directions for the construction of proper apparatus for the driving of such wells, and made arrangements for its transportation with his regiment as it was moved to the seat of war. The circumstances of delay, which intervened between that date and the time when he made his application for his patent in November, 1865, are stated in the agreed statement of facts. Those circumstances sufficiently rebut any presumptions which might otherwise have arisen of an intention on his part to abandon and dedicate to the use of the public the invention described in his patent. The wells made by Green himself at Cortland, and at the fair grounds near Cortland, for the use of his soldiers, were his first experiments. In respect to these, it was said by Judge Benedict, in *Andrews* v. *Carman*, 13 Blatch., 307, 325: "The first experiment was a success in this, that it proved the possibility of obtaining a supply of water by this process; but, of course it could not prove that a tube could be driven down to a water-bearing stratum in all localities, with the cheapness and despatch necessary to render the process one of general utility. It was natural, therefore, to suppose, that, before the process could be declared to be satisfactory, other experiments, in other and different localities, should be made. He could, by law, use his invention for this purpose, and permit it to be used, for two years, without forfeiting his right to a patent. Under such circumstances, it would be going far to say, that his act of permitting the use of his process at the camp in Cortland, where his regiment was then in camp, and of providing material wherewith to construct such wells for his regiment when it should move into hostile territory, amounted to a dedication of his invention to public use, and worked a forfeiture of his right to it."

Section 7 of the act of March 3, 1839 (5 Stat. at Large, 354), protects every one who had purchased or constructed the subject of the invention prior to the application for the patent, and adds as follows: "And no patent shall be held to be invalid by reason of such purchase, sale, or use prior to the application for a patent as aforesaid, except on proof of abandonment of such invention to the public, or that such purchase, sale, or prior use has been for more than two years prior to such application for a patent." There is no evidence in the record of any use or sale of the invention by Green before his application for a patent, and no evidence from which to conclude that any use of any driven well by others before his application was consented to or allowed by him, except in the instances mentioned at Cortland, which were merely experimental tests, made by

himself. Much less is there any evidence to show that there was any use of the invention by others for more than two years prior to his application.

Upon the question of infringement, the agreed statement of facts shows the following: "That the defendants have had in use on their farm for the past seven or eight years one or more driven wells, which wells were put down for the defendants by an ordinary well-driver in the following manner: A tube, of which the lower portion was perforated with small holes and the lower end provided with a point, was driven into the ground until it projected into the water, without removing the earth upwards, as in boring. The water then entered the tube through the perforations and was pumped up through the tube by an ordinary pump. That the defendants have never driven wells for themselves, except as above described, or for other purposes; never have sold or offered for sale driven wells, or the materials for driving them, but have simply used their own wells for their personal use on their farms."

It is now contended, on the part of the appellant, that the claim of the patent is for the process of driving the well, and not for the use of the well after it has been driven, and that consequently the appellant is not shown to have infringed; but, as has been shown in the case of *Eames* v. *Andrews*, the patent covers the process of drawing water from the earth by means of a well driven in the manner described in the patent. The use of a well so constructed is, therefore, a continuing infringement, as every time water is drawn from it the patented process is necessarily used. As was said by Mr. Justice Blatchford in *Andrews* v. *Cross*, 19 Blatch., 294, 305: "Under this construction the defendant has infringed by using the pump in a driven well, constructed in a house hired by him, to obtain a supply of water for the use of his family, although he may not have paid for driving the well, or have procured it to be driven. Such use of the well was a use of the patented process."

The decree of the Circuit Court is accordingly affirmed.

True copy.

Test:

[L. S.] JAMES H. McKENNEY,
Clerk Supreme Court U. S.

Counsel for Appellant,

STERN & PECK.

Counsel for Appellees,

FOLLETT, HYMAN & KELLEY.

23-264

IN THE

Supreme Court of the United States.

OCTOBER TERM, 1887.

No. 16.

WM. D. ANDREWS, GEORGE H. ANDREWS, NELSON W. GREEN, and NOAH J. PARSONS,
Appellants,

vs.

GEORGE HOVEY, Appellee.

THE DRIVEN WELL CASE.

STENOGRAPHIC REPORT OF ORAL ARGUMENTS FOR THE PATENT.

Opening Argument by JOSEPH C. CLAYTON.
Closing Argument by ANTHONY Q. KEASBEY.

October 18th and 19th, 1887.

Judd & Detweiler, Printers.

THE DRIVEN WELL CASE.

ARGUMENT BEFORE THE

United States Supreme Court

IN THE CASE OF

WM. D. ANDREWS ET AL., Appellants,

vs.

GEORGE HOVEY, Appellee.

Appeal from the Circuit Court of the United States for the Southern District of Iowa.

JOSEPH C. CLAYTON, Esq.,
ANTHONY Q. KEASBEY, Esq.,
Counsel for the Appellants.

JED LAKE, Esq.,
Counsel for Appellee.

MR. CLAYTON'S ARGUMENT.

Tuesday, *October* 18*th*, 1887.

Mr. Clayton. I hope that the Court will not feel at all dismayed by the exceptional size of the book the appellant has presented as a brief, but the matter has been before the Court so often and before many other courts so frequently that

we have deemed it an economy of time to the Court that we should put a very careful and thorough digest of the evidence in the case into our brief, so that we might, to a very considerable degree, refrain from consuming much time in going over the case *in extenso* in the opening argument.

This is an appeal from a decision of Judges Shiras, Nelson, and Love, in the districts of Iowa and Minnesota. Two cases are appealed here, but just before the time arrived when the records were to be printed the counsel in the Minnesota case made a stipulation that that case should abide the result here; so that that case is not printed and is not before the Court formally.

Mr. JUSTICE MILLER. Did Judge Nelson take any part in the case?

Mr. CLAYTON. Yes; and Judge Nelson filed a dissenting opinion. The two cases were heard together before Judges Shiras, Love, and Nelson.

THE CHIEF JUSTICE. Each in his own district?

Mr. CLAYTON. They arose in their respective circuits and they were consolidated and heard together. In the Cone case—that is, the Minnesota case—the same witnesses that were examined here were also separately examined there, and in addition to them some few others were examined in the Minnesota case not examined here, and, by consent of counsel, those depositions which were taken in the Cone case have been received and printed in this record, so that the Court here is practically rehearing all that was submitted in both of those cases.

Mr. JUSTICE GRAY. There is one thing I do not quite understand. Which case did Judge Nelson sit in?

Mr. CLAYTON. Judge Nelson sat in both. The two cases were heard before the three judges at the same time. Judge Shiras read an opinion defeating the patent upon the ground, mainly, of one alleged prior use, known as the Milwaukee Well. Judge Love concurred with him and made and expressed an additional opinion, in which he construed a sec-

tion of the statute of 1839, and held (and that is the only law point that will be before your honors in this cause, as I take it) that a patent granted under the act of 1839 was liable to be declared void if there had been two years' use of the invention prior to the application, irrespective of any knowledge or consent on the part of the applicant, and in our assignment of errors we refer to his charge upon that point.

Judge Nelson also filed in the same case a dissenting opinion, in which, upon every point involved, he found in favor of the patent.

Mr. JUSTICE GRAY. I understand that these cases were heard before two judges. If Judge Nelson, as the senior judge, gave an opinion in favor of the patent, why did the three decide against it?

Mr. CLAYTON. That point has never been called to my attention. For convenience of counsel a suggestion was made to the different judges of those circuits that one hearing would serve to dispose of all these cases, and they sat together in Des Moines.

Mr. JUSTICE GRAY. I understand that, but only two judges sit by law in each case, and if the senior judge is in favor of the patent I do not see why that opinion is not to prevail.

Mr. JUSTICE MILLER. Let me say, Judge Gray, this case that is here on the face of it states that the appeal is from the southern district of Iowa. That is Judge Love's district. There were also cases, as I understand, in Minnesota and in the northern district of Iowa.

Mr. CLAYTON. Yes.

Mr. JUSTICE MILLER. These three judges got together by consent. The judge of the southern district of Iowa was the one to decide the case there. I do not suppose that anybody claims that the judgment derived any additional authority or any less authority because two or three judges came together to hear the argument.

Mr. JUSTICE GRAY. The question I asked was whether Judge Nelson sat in this case, and I understand that he did, and another case was heard at the same time.

Mr. CLAYTON. Judge Nelson sat in both.

Mr. JUSTICE MILLER. What do you mean by his sitting? Do you mean he had authority to decide this case?

Mr. CLAYTON. I mean, whether he had any authority or not, *he did hear it.*

Mr. JUSTICE MILLER. He heard the argument?

Mr. CLAYTON. Yes; and filed an opinion; that is in the record.

Mr. JUSTICE GRAY. But he was not assigned by the circuit judge to sit in this case in the absence of the circuit judge?

Mr. CLAYTON. That I do not know.

Mr. JUSTICE MILLER. They sat together, and each judge had jurisdiction in his own district.

Mr. CLAYTON. Of what district was Judge Shiras judge?

Mr. JUSTICE MILLER. The northern district of Iowa.

Mr. CLAYTON. This case was in the southern district of Iowa, and Judge Shiras gave the main opinion.

Mr. JUSTICE MILLER. The question is not who read the opinion. This must be the judgment of Judge Love in the case and of nobody else.

Mr. CLAYTON. Then do I understand that the Court, in considering this appeal, will confine itself to the point passed upon by Judge Love?

Mr. JUSTICE MILLER. The Court will decide this whole case; it is all before it; and any argument Judge Love made or any arrangement Judge Shiras made or any argument Judge Nelson made is good for that much.

Mr. JUSTICE GRAY. Is only one of the cases before us on this record?

Mr. CLAYTON. Yes, only one case.

Mr. JUSTICE MILLER. And that is the case from the southern district of Iowa and from Judge Love's judgment, and his judgment was to dismiss the bill.

Mr. CLAYTON. The other case, the Minnesota case, as I have stated, is under a stipulation to abide the result of this, and that stipulation is on file in the court here.

Mr. JUSTICE MILLER. I say this, because in Iowa and all these circuits we get together and more judges are allowed to sit on the bench than are necessary for the real conduct of the court, but they sit there and give their views, and nobody supposes that it vitiates the judgment. That is the way the judges are got together.

Mr. CLAYTON. In our assignment of error we have stated the fact that there were opinions filed both by Judge Shiras and by Judge Love, and, as the grounds of the decisions were different, we assign error under each opinion. I will not trouble the Court at length, but I propose as rapidly as possible to skim over the salient points of the case without going into any synopsis of the prior extended litigation, with which this Court is quite familiar.

We would say, in the beginning, that as to the main questions involved in this case we hold that they were settled by the two cases which were decided at the last term—the case of Eames and the case of Beedle. The main question, that has always received the most attention in all the litigation, is that touching the matter of reissue, and that was passed upon so fully that I need not say a word to this Court upon that point.

And, then, too, it seems immaterial to go into any elaborate discussion of the nature and character and operation of the invention or the date of origin, or anything of that kind. It is all put in the brief, and it will be more convenient for the Court to look into that.

My learned adversary, in his brief, made either a mistake or a misstatement bearing on this point, and it is but fair to say that during the course of our argument we will have occasion to point out so many *mistakes or misstatements* that the Court will be under the necessity of looking with some care upon the testimony. The statement to which I refer,

made by my adversary on the second page of his supplementary brief, and also at several other points in his other brief, is this:

"In this case at bar there is no testimony like that quoted in the Eames case."

That is referring to the construction and operation of the invention, and that, I take it, is made with the view of persuading the Court to listen to further and extended argument, and examination of experiments, so that they may re-examine into the whole philosophy of the case. Now, in point of fact, the evidence in the Eames case touching the practical operation of the invention and its theory and its advantages was detailed at great length by our expert, Mr. Andrews. That same witness was examined and cross-examined at great length in this case by my learned adversary, who also called as an expert a Cornell professor, Mr. Anthony, and he was examined at great length. Prof. Anthony (and I give as reference pages 2137 and 2142, Q. 169 to 178 and Q. 194) directly coincides with the theory advanced by Mr. Andrews, the theory held by the Court in the Eames case at the last term, and the theory upheld by Judges Blatchford and Benedict. So that, in so far as that statement in my adversary's brief is intended to raise those issues, we say it is a failure.

Much has been said by my adversaries in this and other cases about the principle involved in Colonel Green's invention, and there appears to have been much confusion of ideas or incapacity to comprehend that principle.

A sentence or two will suffice to state it clearly.

In the dug well or in the artesian well the force of gravity alone compels the water to flow into the well.

In the Driven Well, in addition to the compelling force of gravity, atmospheric pressure aids in compelling the water to flow into the well, within which a vacuum is created by the action of the pump.

Wells to which water is furnished by gravity *alone* are soon exhausted.

The combined force of the water's *own gravity* and the pressure of the atmosphere not only increases the supply, but this increased supply with the Driven Well remains continuous. (See Record, page 241.)

This is all we claim as the *additional* capacity of the Driven Well in getting its supply of water from the surrounding soil.

And *prior to Green* the combined action of gravity and atmospheric pressure were never used to secure this rapid, copious, and continuous supply of water directly from the earth into a well.

Expert Andrews gave this explanation with perfect clearness in this case, and also in the Eames case. In this case defendant's own expert, Anthony, gives the same explanation.

I quote from him :

C. Q. 169. Does or does not the pressure of the atmosphere upon the surface of the water in the earth surrounding a Driven Well add to and assist the force of gravity in supplying water to such a well?

A. Since I understand by Mr. Andrews that the Driven Well is simply the tube in the earth, I answer it does.

C. Q. 170. How much would be added to the capacity of a Driven Well, the upper openings into which at the lower end were three feet under water, if it were driven down in the same kind of soil until the upper openings were twenty feet below the surface of the water?

A. It is a question that it is impossible to answer. In very many cases nothing would be added to its capacity.

C. Q. 171. In answer to questions I have asked you concerning the deepening of open wells, I think you have answered that the capacity in a given soil and stratum of water would be increased as the square root of the depth; is that correct as regards an open well?

A. The velocity of inflow is in proportion to the square root of the head. The capacity of a well depends sometimes upon the velocity of inflow, sometimes upon the quantity of water present in the earth. If the quantity of water present is unlimited, in the case of the Driven Well there would be

no advantage in putting it deeper than was necessary to prevent the upper openings ever being uncovered.

C. Q. 172. Does or does not the same rule hold good in the open well?

A. It does not hold good in the open well unless the water flows into the open well so freely that no amount of pumping can ever draw it to the bottom.

C. Q. 173. Then do you mean to be understood as testifying that a different principle governs the operation of a Driven Well from what governs the operation of a dug well?

A. A different principle governs the flow of water into the Driven-Well tube.

C. Q. Does not the operation of the pump in the open well draw the water directly from the body of the well itself, from the free water standing in the well?

A. I do not understand what is meant by the body of the well itself. The water is drawn from the free water standing in the well.

C. Q. 179. Is not the water pumped from a Driven Well drawn directly from the earth surrounding the well?

A. It is.

C. Q. 194. What have you reference to as the difference of pressure possible?

A. The pressure to force the water into the open well is, on an average, one and one-half feet of water less the friction in the sand. The pressure to force the water into the pump tube of a Driven Well is two and one-half feet of water added to the atmospheric pressure, equal in all to about thirty-six feet of water less the friction in the sand.

So that Mr. Lake mistakes the evidence when he says that there is no testimony in this case like that in the Eames case concerning the operation or principle of Col. Green's invention.

Then there is a great deal of testimony in this case touching the alleged abandonment of the invention. In response to that we assert on our responsibility as counsel, after careful examination, that the statement of fact contained in the Beedle case, and which was based substantially upon the finding of the facts by Judge Benedict, is a fair and just

summary of the evidence contained in several hundred pages of this record.

So, then, as to the evidence upon the point of abandonment, it being identical in substance with the statement of facts, that question is fairly eliminated from this case.

The only defenses in this case fairly and fully before the Court which were not in the cases before decided are, first, that the defendants say they do not infringe; then they set up the Purdy or Milwaukee Well, which was made in Milwaukee, and which—and this is significant—is the only item of alleged prior knowledge upon which the court below defeated the patent.

The court below did refer to the evidence touching the so-called Independence Well (which has heretofore been considered by Judge Blatchford and by other judges), but intimated that even if it were true that this one isolated well had been made in Independence five or six months before the date of this invention and no other fruit followed, it might be held to be within the category of *abandoned experiments*, and have no weight upon the case.

Then the only item of evidence of prior use or of prior alleged wells that was referred to by the court below is the Purdy or Milwaukee Well, and that I will show in a few moments, when I come to it, was simply an old-fashioned artesian well, four inches in diameter, with a lead pipe going down into the water and a pump lifting it up, exactly as is done in the ordinary dug well.

Then, too, there are before the Court what is called the Warsaw Well, one called the Tallman Well, and the so-called Naperville Well, and one or two alleged prior publications.

It may be said generally that the Independence Well was testified about in the cross-case before Judge Blatchford by all the material witnesses in this case, and that the material parts of that same evidence were also in the French case, before Judge Nixon.

THE CHIEF JUSTICE. Are these cases cited here? Was the same testimony in the Eames case?

Mr. CLAYTON. It was not in the proofs then, but was in the answer; now they have got it in the proofs.

THE CHIEF JUSTICE. So that the Milwaukee Well and the Independence Well are new to this case?

Mr. CLAYTON. They are new to this case; and also the Warsaw Well and the Preble Well. The answer in general terms denies the infringement, as I have already stated. I now hand to the Court copies of the Hovey patents of 1872, for defendant's answer and proofs admit the construction by him of many wells according to the Hovey patent.

THE CHIEF JUSTICE. Is the patent in the record?

Mr. CLAYTON. It is introduced into the evidence in the record. It was unintentionally omitted in printing, and I present now, by consent, the Hovey patent of 1872, entitled and described as "IMPROVEMENT IN THE FORMATION OF DRIVEN WELLS."

THE CHIEF JUSTICE. To be taken as if printed in the record?

Mr. CLAYTON. Yes.

Mr. LAKE. They are printed in our brief, but left out of the record.

Mr. CLAYTON. The answer concedes that the defendant, George Hovey, put down a number of wells constructed according to the Hovey patent.

THE CHIEF JUSTICE. This is the patent under which the defendant claims the right to drive wells.

Mr. CLAYTON. Precisely. Before I refer to that perhaps it may be proper to state that, although many of the witnesses here examined were not examined in the Eames case and the Beedle case, yet they were all set up in those answers, and if the learned counsel who tried those causes had deemed their testimony of any value—the four hundred and eighty witnesses in one and the two hundred and twenty-two in the other—they would have examined them. *They did not examine a single one.*

So, with full knowledge of their evidence and in view of the fact that they had been examined over and over again, with great and commendable frankness to the court they omitted the labor of examining them all—and in a great majority of these cases where counsel have tracked and retracked the evidence over again—they would not import the same evidence into other cases and put us to additional trouble.

They had in mind also, your honors, the fact that the answer set up, not alone these three or four wells on which some proof is taken, but they claim that they are scattered in many portions of the country, and you would think Driven Wells were as thick as leaves in Valombrosa if you were to look at the answer only, but when you look at the testimony you find that the opinion of the court below rests upon the Purdy Well only, which was not a Driven Well.

I defy any man to tell what kind of well the Preble Well was, or whether it was a well of any sort. The Independence Well—there was undoubtedly a well there, but the witnesses misplaced it by a matter of five years, and so also as to the Warsaw Well. The main fact on which they relied to prove that the Warsaw Well was made in 1859 consisted in a statement that they remembered that a common planing mill was burned on the 6th day of October, 1859, and that this well was used to supply water to extinguish the fire. We prove incontestably and the defendants conceded that six years after that, on the very same day of the same month, to wit, the 6th day of October, 1865, that same mill, having been rebuilt, was again destroyed, and that was the time at which the well was used, if at all.

I have quoted in my brief (but I will not trouble the Court with it at the present time) the testimony of the defendant touching what he did in regard to making wells. The substance of it, to put it in the shortest form, is that he put down a great many wells according to the process and invention for which his brother obtained a patent in 1872.

The difference between what this man does and what Green does is this: Green sometimes in very hard soil drives down his rod in the first instance, removes it, and then drives down his tube. Ordinarily he simply drives his tube. Under the Hovey patent, Hovey drives two tubes. He drives his first tube, which is built a little stiffer and stronger perhaps than the other, until he has got it down to the proper depth; then, after pumping out the finer particles of sand, he withdraws his first tube and drives down another tube in its place, perforated in precisely the same way, but covered with a strainer. In other words, he drives two tubes, the first with coarse openings and the other with a fine mesh strainer.

All over the face of the patent is printed "improvements in the formation of Drive Wells." It is needless for me to devote a word to discussing the use of that thing as being or not being an infringement of the Driven-Well patent, with which the Court is now so familiar.

I have endeavored to generalize and briefly summarize the general scope and effect of the testimony on the different branches, and as to much of that I will give the Court the substance orally, and after each generalizing of the substance of the evidence my colleague and myself have printed in our brief a very careful digest, with references to page and question, which contains all essential features of the evidence, for the convenience of the Court.

I come now to consider the question of the alleged prior wells. In the very extended litigation which we have been compelled to conduct on this subject we have come upon what we may call two classes of alleged prior wells.

The FIRST CLASS is an alleged construction that never was a Driven Well.

The SECOND CLASS are wells that were undoubtedly constructed according to the principle and operated as the Driven Well, but were misplaced as to time.

Those are the two great general classes that we have come

across in the twenty years' litigation in this case in its varied forms.

Occasionally we have come across a THIRD CLASS—*nondescript* is, perhaps, a better word for it—such as the Tallman Well, and it would require the astuteness of a Philadelphia lawyer to determine what those things were—neither fish, flesh, nor fowl, nor good red herring. The descriptions are so uncertain and vague, the recollections of it so uncertain, there are so many advantages and disadvantages, then, as to the tools used, and how they were used, and when they were used, and what they did, or whether they ever did anything, that it is impossible to tell what those things were exactly.

There is another feature that is common to nearly all these cases of alleged prior wells. In the first place, a man who, it is said, has made them, is able at his first effort to make a well with all the improved modern appliances. Indeed, the *idea* of making a well in its most complete form springs, Minerva-like, mature and perfect at birth.

Second, and it is a very important and telling feature in passing upon the weight of evidence of this character, these wells being misplaced as to time, no crop of other wells ever follows. So extensively has this thing been used that where in any community one Driven Well has been put its cheapness of construction, the purity in quality and the quantity of the water that is gotten by it, together with its twelve or fifteen other advantages that might be enumerated, are so great that it commends itself to the judgment of all the neighbors who see it, and swiftly the whole community becomes filled up with them—so that I have reached that condition of mind that when a man in whom I put the most trust as a careful observer, as an accurate stater of facts, and as a truthful man, will come to me and say he saw a Driven Well made in 1860 I cannot believe him.

The truth is positive that there can have been nothing more than a casual experiment or two, that by accident may

happen here or there; but they did not come into anything like use until after 1861, and then the country became so filled up with them that the burden upon my learned adversary to satisfy the Court of a prior use and knowledge is as tremendous a burden as ever counsel struggled under. Of course, the Court will bear in mind that the burden of proof lies upon the defendant, and we contend, as matter of law, that it is not a mere preponderance of testimony that is sufficient to overcome the *prima facie* validity of a patent which is granted under a solemn contract, but it must be proof of a character that reaches to the degree that the Court will say there remains no reasonable doubt.

It must amount to a conviction.

All that we have to do, therefore, is to raise a reasonable doubt of the certainty of the defendant's case.

If we can go beyond the raising of a reasonable doubt and distinctly show a direct and positive contradiction, then, of course, the defendant fails.

Mr. JUSTICE MILLER. Why do you say that it is sufficient for you by your testimony to raise a reasonable doubt?

Mr. CLAYTON. Because where there is a reasonable doubt it should always be resolved in favor of the side whose title is *prima facie* valid.

Mr. JUSTICE MILLER. That principle is applicable to criminal cases. It may require more evidence to overcome a *prima facie* case, it is true.

Mr. CLAYTON. That is the extent to which I go.

THE CHIEF JUSTICE. I suppose you claim to have a patent, and the defense must prove that you are not entitled to it?

Mr. CLAYTON. The patent holds until its invalidity is clearly proved. The Milwaukee Well we come now to consider, concerning which the only witness who has testified is the witness Purdy in a very brief deposition.

Mr. JUSTICE MILLER. Is the allegation that this discovery or invention was in public use before the application of the plaintiff for his patent?

Mr. CLAYTON. That is what the other side are trying to prove.

Mr. JUSTICE MILLER. And you deny it?

Mr. CLAYTON. We deny it, and I am now about to comment on the well upon which the opinion of the court below mainly rests. The court say that Purdy in 1849 and 1850 was in the business of making wells in Milwaukee.

Mr. JUSTICE MILLER. Is that Judge Love's opinion?

Mr. CLAYTON. No; Judge Shiras'. Judge Love concurs in what Judge Shiras previously said, and then goes off on a point of law on which he gives his own opinion. I quote that language of the court, and it seems to me that the statement by the court takes the case out of the category of our invention:

"He used iron rods about two inches in diameter and made "so that they could be coupled together. The first rod was about "sixteen feet long, the lower end being in shape of a drill. "This rod was worked up and down by a rope running over a "gin pole, the rod being raised up and down, and in that way "the earth was displaced by the rod as it went down. Tubing "of about four inches in diameter was driven down as the "rope progressed. This tube formed the lining of the well. No "earth was removed upward, except in case of striking quick-"sand, when a long sheet-iron bucket, with a valve in the "bottom, was used to bring up the quicksand. When the "tube had been forced down into the water, if the water did "come to the surface a pump was used, the tube to which "the pump was attached being placed inside the tube, first "forced down, the latter forming the lining of the well."

In other words, there was a four-inch hole made by a drill with a chiseled edge, a sand bucket being used to take out the comminuted earth; a lining of metal four inches in diameter was inserted into that hole, the water occasionally overflowing the top, and where it did not flow over a tube with a pump was attached, put down into the water, and lifted it up, as was done in any of the old-fashioned artesian or open wells. And then, too, this man Purdy *himself* testi-

fies that the wells which he made in Milwaukee *are not the same kind of wells as the Driven Well*, and that he knew what the Driven Well was, and had been in the habit of making it.

In what respect do they differ?

He says the pump in the Milwaukee Well was not attached to the tubing of the well; the pump by which the water was lifted from the well was not attached to the tube that constituted the lining of the well, but to a smaller tube that was inserted in the larger tube. The deposition of Mr. Purdy is in a brief compass, and we regarded it as so entirely foreign to our invention that we made no answering proof on that subject at all. Commenting upon the well, the senior judge of that court, Mr. Judge Nelson, said that he differed from Judges Love and Shiras, "because the Milwaukee wells testified by Purdy were artesian wells and Green's process was not used. The tubing described made a reservoir, and a lead pipe attached to a pump was dropped into it and the water drawn through the lead pipe."

With that statement of facts it is very hard for me to understand how it was that his honor Judge Shiras should conceive that a well of that kind of construction and operation was an anticipation of the Driven Well unless he entirely ignored the essential principles on which the value of the Driven Well and the validity of Green's patent had been adjudicated to rest by this Court.

Perhaps the largest part of the evidence in this case is the record of the so-called Independence Well. This well belongs to the Second class of which I have spoken. It was undoubtedly a Driven Well, but it was misplaced as to date. There are certain difficulties always attending this class of cases, and when we can point out to the Court any *general principle or indicia* whereby it may weigh testimony on the general principles of evidence rather than upon a mere statement or assertion then we can aid the Court in properly weighing it.

None of the witnesses, as a rule, who attempted to place this well can tell who constructed it, nor where the constructor came from, nor, if they knew, where he was.

Second, and this is an interesting fact touching the Independence and other Wells, they *nearly always* happen to have been constructed by somebody who was operating under a patent right (who was trying to sell a patent he already had) and in some place was exhibiting them; they occasioned great public notoriety and were talked about.

Now, the Suggett patent of 1864 is the first patent ever granted relating to the subject-matter of the Driven Well, so, when the witnesses say, as they do in regard to the Independence Well, that the men who made the first well were operating under a *patent*, the conclusion becomes inevitable that if they were operating under a patent for the Driven Well it could not have been in 1861, as claimed, because there *was no patent* granted until 1864 on a Driven Well.

THE CHIEF JUSTICE. I have forgotten the date of the Green invention.

Mr. CLAYTON. The fall of 1861, and the patent was in 1868. There was a long, tedious interference going on for a series of years. The first application was made in March, 1866.

Mr. KEASBEY. The first application was in January, 1866. The papers were lost in the Patent Office, and the application was renewed in March, 1866.

Mr. CLAYTON. A vast number of witnesses have been examined *pro* and *con* concerning the Independence Well, but there is a great difference between the defendant's witnesses as to the date. It is claimed by defendant to have been constructed at different dates, varying from the spring of 1860 to April, 1861, June, 1861 and 1862, while one of his witnesses, Allen, says it might have been in 1863.

This is a *consensus* of their own witnesses varying on that point, and they do not agree as to the time in which it was

made, and to have done them any good it must have been prior to the early fall of 1861.

All of the principal witnesses touching this Independence Well were in the very voluminous cross-case before Justice Blatchford. My adversary here was of counsel in that case, and from the great mass of depositions bearing upon that point he selected the eight best and strongest, and they were stipulated into the case before Judge Blatchford. In addition to these, eight others of the same witnesses were examined in that case. Judge Blatchford's analysis of their testimony we regard as of great persuasive weight in the case at bar.

Judge Nelson, in this case, commenting upon the Independence Well, differed with the other judges, "because," he says, "prior use should be clearly established, and mere pre-
"ponderance of evidence is not sufficient and satisfactory;
"to doubt upon this point is to resolve it in the negative.
"The proof of prior use at Independence, Iowa, leaves room
"for fair and reasonable doubt when weighed with care and
"scrutiny."

One of the principal witnesses called by the defendant to prove the Independence Well was Sherwood, who said it was in the spring of 1861, the latter part of April or fore part of May, on the west side of the river. He cannot state how long it remained there, but his recollection is till the fall; and he fixes this date from the immaterial and non-related fact that he was then keeping White's Hotel with a man named Kimball, and never was in business with Kimball before or since, but he did not see the well constructed.

The Court will be interested in seeing, in some instances, by what curious circumstances or forced associations of ideas the counsel on the other side has attempted to fix dates. For instance, one of his important witnesses was twenty-eight years of age when she was examined, and she testifies that when she was eight years old her father called her, "Lib, come here and bring me a glass of milk," and she brought

her father a glass of milk, and she detailed what conversation she had, and she remembers that on that occasion, when her father asked her to bring him a glass of milk when she was eight years old (twenty years before she gave the testimony), she had seen a pump set on what appeared to be a tube coming out of the ground. Look at the evidence of the learned counsel himself. He, too, says that on one occasion he saw, in 1861, a pump on an iron tube extending out of the ground, and that he knows he saw that kind of a pump at that time, *because* he produced his marriage certificate of that year. What possible relation is there between a man's marriage and the first time he has ever seen a Driven Well? They are totally non-related; there is no weight or fact of relation one to the other.

This man Sherwood, to whom I referred a moment ago, says he did not see the well constructed. If your honors please, it is manifestly impossible for any man who sees a pump—suppose there is a pump here—to tell, even if he does see a tube, how that well was made and what its construction was. *Non constat* that iron pipe may run to an ordinary cistern or a barrel or into a tub of cider or what not?

A man, in order to be able to tell whether or not a certain well was constructed according to the process and utilizing the invention here, must have seen the thing actually constructed and be able to detail *how it was constructed.* No number of witnesses merely seeing an iron pump on a tube are warranted in saying that that well was constructed according to this invention. He says that he could not state at what time the stranger who came with these tools came to the hotel nor how long he remained nor his name nor whither he went; that the well was a great curiosity and created great excitement, and that there were lots of Driven Wells there a few years afterwards; and much to the same effect is the witness Marinus. He did not see the tube before it was driven, and, if that were so, he could not have

seen it in the act of driving nor have personally known how the well was made. He, too, says it was made by a traveling man.

Many of the witnesses touching this Independence well, introduced to prove that it was in 1861, and others to prove that it was in 1866, agree upon *two or three vital points.* They *all agree* that the well was made by strangers; *they all agree* at what hotel they stopped; they all agree as to the particular corner of a particular plot of land upon which the well was constructed, and *they all agree* that the tools used for the purpose of making it were kept in a big box in the cellar of that hotel.

It seems very strange, *incredible*, indeed, that two strangers should have come in 1861 with a box of tools and kept them in the *same* part of the cellar of the *same* hotel, *both strangers in both instances*, one of them named "Charlie," and both of them made a well upon the very same corner of the very same plot. These facts cannot be disputed, nor does my adversary deny that there was a well subsequently made there, as I say, about five years afterward. I have sent up (under the same circumstances under which I sent up to the court the Hovey patent) a plot of Independence. If the Court will look at the central plot (nearly central), marked No. 3 on the diagram——

THE CHIEF JUSTICE. The diagram used in this case?

Mr. CLAYTON. Yes. It is in the evidence. It should have been printed in the record. It was an oversight that it was not. Counsel got together and eliminated as much as they could of the portions not essential, and in the labor of preparing it one or two papers were omitted. I simply show that to give the Court a general idea of the location. We established by a great number of witnesses (and the defendant's witnesses, most of them, admit it) that on this block, nearly opposite where this Driven Well was made, there was, when it was made, a Blacksmith Shop. We produced the blacksmith, produced the blacksmith's deed, and estab-

lished conclusively that there was no Blacksmith Shop at that place until the later date instead of the earlier.

THE CHIEF JUSTICE. Until 1866?

Mr. CLAYTON. Yes; until 1866.

Now, skipping over one or two of these witnesses, Tyson, who had been a witness for the defendant, gave the date as 1860 or 1861: "Cannot tell how long it remained there; "says two or three months, more or less; does not know "who put the well down; thinks they represented them- "selves as coming from New York; there were two of them— "strangers; they were not there over a week or ten days; "the only person that he can say positively was present was "a man named John Fargo, who lives close to Buffalo, New "York." (Record, p. 282, Q. 5–10.)

This is a vital fact, because Fargo positively fixes the date as being in 1866, and he says that well in 1866 was the first Driven Well he ever saw, and he was present when it was made.

It was through cross-examination that we were enabled to find the persons alleged to have been present.

In passing let me refer to an instance in which on one occasion, in regard to a certain well, a man fixed a date that we knew was too early. We hunted up the well, excavated it, exposed the pump that was in the well, when it was made, and found cast on the pump a date eight years later than the witness had fixed.

To go back a period of twenty or twenty-five years, with an unsophisticated man, and especially when a man is under the adverse influence of interested motives, and pretend to establish the precise date of a course of operations or a series of processes is a thing that human memory cannot often do.

The same witness, Tyson, says: "The well was put down as an advertisement, and the parties who made it offered to make other wells of the same kind; that he does not know where the parties went to, and never heard of them afterward; he helped to put down this well, but did it for the

novelty of the thing; could not tell when he next heard of a well of this kind, but thinks it was in 1864 or 1865; says the Driven Well did not come into general use in Independence directly after this first one was put down, but three or four years afterwards or perhaps longer."

McEwen "thinks the well stood there pretty much through "the summer of 1861; excited curiosity; says it was put "down in the spring of 1861; don't remember who put it "down, but one of the operators was named 'Charlie.'

"They were Eastern men, stopping at the White House; "I don't remember the name of the firm. Those were "strangers who put those things down, and one was named "'Charlie,' and they were Eastern men."

We discovered that the man who really did the work was a man named Charlie Brown, and Charlie Brown was examined in this case and upset all the evidence about any well in 1861.

The witness McEwen also says that this well was an experimental well.

There were published at that time in Independence several newspapers—the Conservative, Bulletin, and the Guardian.

Now, this is a fact of persuasive evidence.

Mr. Lake was himself examined in the case in behalf of the complainants. He was asked if he had been able to find any copies of a newspaper published in the year 1861 descriptive of this curiosity that was there in town. Mr. Lake testified that there had been a good many numbers which he had sought, but which he had been unable to find, but in none of those that he did find was there any description in 1861 relating to that well.

Now we prove—I read briefly from two or three newspapers of the date of 1866—

Mr. JUSTICE MILLER. Did you call Charles Brown?

Mr. CLAYTON. We called Charles Brown to prove that he put down a well there in 1866. We hunted him up and

found him for that purpose, and he made the well in 1866. At page 326 of the first volume of the record we produce a number of extracts from Independence papers of different dates in 1866, in which they very gushingly described the *wonderful Driven Well* introduced there and speak of the people going to see it and how valuable and good it was.

One of them said:

"Why, for aught we can see, poor pilgrims can now carry "a well on their camel's back and suck out cool fresh water "anywhere from under the burning sands of Sahara's desert."

So says one of the enterprising reporters. If in the live and active town of Independence in 1861 there had been a Driven Well that was seen by hundreds of people, talked of as a great curiosity, as a valuable invention, as a boon to man, it is *incredible* that the active and enterprising gentlemen who edited, controlled, and reported for the newspapers of that date should not have had a full account of it.

To my mind, the thing could not have been there at that time and have escaped the more than Argus-eyed reporters.

The complainants admit and clearly prove that there was a Driven Well made at some time on or near the identical spot, the northwest corner of that particular block, and we claim that the evidence shows that the well was not made there at the particular date claimed by defendants, but five years later. There are many concurring circumstances that point to the latter as the true solution—that is, the *mistake* of five years—rather than to charge any of these witnesses with a wilful misstatement of fact. How easy it is to make such a mistake we all know. When we can resolve conflicting testimony by pointing out a manifest mistake without any imputation is it not our duty to do it? One of the witnesses gives as his reason that he left Independence that fall and did not return for four years, but he nowhere states whether he recollected that the transaction occurred before he went away. Another bases his recollection on the fact that he and other friends left his wife and

his house on a short visit and went out to examine the well. For aught that appears, that incident might have just as well occurred five years before or five years after, and when we take into account that the evidence shows that there is a strong feeling, almost amounting to a form of insanity, in some parts of the West, against the Driven-Well patent, and as an instance of insanity I can refer to the act of the Legislature of Minnesota, which actually (incredible as it may seem) appropriated $7,500 to pay the expense of fighting this Driven-Well patent. Where such an act as that can take place—where a community will warrant such an act as that—it is reasonable to suppose that there is a strain of conscience and a bias of recollection with a view to upset the patent against which that form of insanity prevails. When viewed in the light of the fact that the *first patent* taken out was in 1864, that the defendants established that this *pretended well of* 1861 was patented, that a stranger was advertising and exhibiting it, carrying along tubes and other appliances for making wells, trying to sell something with territorial rights, the improbability ripens into a certainty.

When we consider that all these witnesses concur in stating that this well was a curiosity; that it created great excitement; that crowds of persons witnessed it; that it was a desirable thing for all the Western States, and that notwithstanding all this not a vestige of it remains—no trace of its origin, not even the name of the wonderful inventor (even the pipe vanished and left no trace)—we are irresistibly compelled to the conclusion that it could not have been there at *that* time. Then, too, if early in 1861 any one had honestly and genuinely created a Driven Well, an invention which has been talked of and litigated about, and in regard to which fabulous stories of its great value have been the talk as much as about anything that ever was invented, if there had been two men that had invented that, we should have heard of them in the attitude of claimants

coming forward *at some time* to contest Green's right to the patent and claiming the honor of the invention, and that a patent should be granted to them. We cannot see them; we cannot find them; no man who *made* the Driven Well in 1861 has been discovered.

The one of two conclusions to which we must come upon this well would seem to be—and the appellants are safe under either horn of the dilemma—

First. That the well as an *experiment*, no fruit following from it and being abandoned, cannot avail the defendants anything here, because it would be clearly in the category of ABANDONED EXPERIMENTS that cannot militate against the rights of a subsequent *bona fide* inventor; and,

Second. That it was not made in 1861, but really in 1866.

This brings me to the consideration of what is called the Warsaw Well. In this case there were but four witnesses examined on the part of the defendant concerning the Warsaw Well. In the equally elaborate case that was tried before Mr. Judge Nixon the defendants examined these same four, and four others in addition, and Judge Nixon made a very careful analysis of the evidence.

Mr. JUSTICE MILLER. Where is this Warsaw?

Mr. CLAYTON. In the northwestern part of the State of New York, in Wyoming county. Without giving it in detail to the Court, one of the vital points of the testimony is of their principal witness, on whom they mainly depend, who claimed to have had a Driven Well constructed in 1859. He concedes that some years after that—in 1867, he thinks—he engaged another man, named West, who was acting under a patent, to put a well down for him in the same place, and West being called, testifies that this man Buxton (who swears that he himself drove a Driven Well there) asked him, West, six years after (he being a professional well-driver, acting under a patent), "Mr. West, do you think you could

make a Driven Well at this point?" showing in his mind a doubt of the feasibility of it, either from the soil or nature or character of the place, whether it could be done, and West said it could, and West did make a well there for him, and Buxton paid him for it. The main point on which my adversary relies for fixing the date of the Warsaw Well in 1859 related to the fire at the planing mill, which was burned up on October 6th, and the other side concede—they do not deny it—that the same building being rebuilt was again destroyed by fire six years after on the same day of the same month, and West made this well shortly before or about the time of the second fire.

In the brief is my analysis of that testimony and also the reasoning of Judge Nixon upon the same evidence, plus some other witnesses, "Does the rebuttal evidence of the complainant, in regard to the Warsaw Well, suggest a reasonable doubt of its truth?" He has summoned a number of witnesses, but it is sufficient for the purposes of this case to refer to the salient points of the testimony of a few of the more important. In the first place these witnesses were all old residents of Warsaw, and they agree in the statement that the first Driven Well they ever heard of in that town was put down in the street in front of the barn of the Brick Hotel property in the summer or fall of 1865, and that it attracted much attention at the time; was discussed by the citizens generally as a new invention. In view of the number of witnesses who now testify to their knowledge that Buxton invented and sunk another Driven Well of the same construction as early as the year 1858 or 1859 it seems rather singular that no one then remembered or adverted to the fact of its previous existence and use in the town.

And he refers to the names of the witnesses, the same as are before your honors, as follows:

In the next place Elihu R. Benson, Charles P. Williams, and Clavin W. Bisby were in the employ of the Buxtons in

their manufacturing establishment for a number of years, including the years 1858 and 1859. They were on the premises daily and gave intelligent accounts of the sources whence they procured water for carrying on the work of manufacturing. They severally testify that *no Driven Well existed there* to their knowledge, and they do not understand how it could have been there without coming under their observation.

The testimony of John West (to whom I referred a moment ago) renders it still more incredible that a Driven Well existed in Warsaw in the year 1859. He states that he has lived in Warsaw for twenty-eight years past and he has never heard of a Driven Well there until the summer of 1865; then two or three men came over from Bath or Penn Yan and put down one on the Brick Hotel property; that it excited great attention as a novelty, one hundred men or more being present; that he obtained the right to drive these wells in Warsaw shortly afterwards, and put down in town from seventy-five to one hundred wells; that Mr. Buxton employed him to sink three in different places on his property, one of which was in his Blacksmith Shop; that he paid him the usual royalty for the patent right, and that all this occurred in the early part of the year 1867. The circumstances attending the sinking of the well in the Blacksmith Shop are so inconsistent with any theory that Buxton had previously invented and used, a few feet distant for several years, a Driven Well that I quote his (West's) statement of what took place. The witness said: He (Buxton) took me into the shop and showed me where he wanted the well; asked *me if I thought I could make a* Drive Well there; told him I thought I could; said he had a good well—dug well—just outside of the shop; plenty of water, but it got dirty, and thought if he had a Drive Well inside would be better for his boys. Such evidence greatly impairs the force and value of the testimony offered to prove the prior invention and use of the Driven Well. Green's invention was in the

year 1861. Buxton says that a few years elapsed—how many he could not say—between the time of his sinking the first Driven Well and the date when West put down the second, and he is unable to indicate the year when the latter took place. Nor does he attempt to explain why he paid another a royalty for the privilege of using his own invention. A memory so defective as to allow the possessor to forget in a few years that he had made one of the most REMARKABLE INVENTIONS OF THE CENTURY cannot be depended on for accuracy in the statement of transactions which took place twenty years previously.

But, even if the Court should differ with this reasoning of Judge Nixon and hold that Buxton did make a Driven Well in 1859, it cannot escape from holding such well to be a mere isolated and ABANDONED EXPERIMENT, of no avail against Green's patent.

That brings us to consider the so-called Preble Well, said to have been made by a man named Tallman, who, as is usual in most of these cases, is dead at the time we want to find out anything about the real construction and operation of it. If this well ever did exist it belongs to what I call the *third class.* It is described by different witnesses in different manners so vague and so uncertain that it is impossible to determine what kind of a well it was or how it was made. Of course, if it be vague as to construction and uncertain as to its operation, that totally wipes it out of competition as of any value, and if it be vague as to its time it cannot do us any harm. This well was referred to by a good many witnesses, including most of those who testified in the elaborate case against Cross, which was before Mr. Justice Blatchford. I have tried to find out how the thing was made, and I confess to the Court that I have not any idea accurately to-day of what kind of a work it was. There was some kind of a well. There was an old-fashioned dug well; that is conceded; and there was a big timber running down the middle of it, and there was some kind of

a piece of pipe attached to that, and they produced a little piece of pipe here which one of the witnesses says was the pipe that was there; but there is nothing to show but that that piece of pipe might just as well have been used tied on to the timber to go down to a certain depth at the bottom of the well to draw water from the old-fashioned dug well in which it was placed. There is some amusing testimony concerning that old piece of gas pipe. Tallman, the brother of the man who is said to have made it, is the witness who had the custody of that piece of pipe. He says he was not present when the well was made nor there when it was put down. He was there within a few days or a month after the time it was put down. He says that a pipe was inserted in the ground at the bottom of the well, which was twelve or fourteen feet deep, and stoned up; that there was a pump attached to the upper end of the pipe, and that there was a windmill connected with the pump. It appears that that was the first windmill erected there, and that it excited a great deal of curiosity. The witness professes to produce the actual pipe which had been used in the well, and examination of the testimony of the witness shows that he is utterly unable to know that the pipe produced was ever in the well. He said that the pipe was originally five feet long. The pipe produced is only twenty inches long. He nowhere pretends to say that he *knows* when or by whom the pipe was taken out of the well, or that it was even taken out at all; does not even know what has become of the windmill; has not visited the well since the windmill was blown down and discontinued. All he knows about the pipe that he says was the original pipe used in the well is "that his brother brought a large quantity of old iron—perhaps a couple of thousand pounds—and dumped it down near the barn and it laid there; that there were two wagon-loads; did not think it worth taking away;" and yet twenty years after he produces this piece of pipe twenty inches long and says he is advised and believes it is worth $100,000. That is an item of evidence to destroy

our outrageous monopoly of the Driven-Well patent, and he would not, for a long time, permit the thing even to be offered in evidence. He valued it at $100,000, and yet he did not know where it came from with any certainty. Three pieces of it had been cut off for various purposes—he could not tell where or when—but he got that little residue that he valued so highly. This leading witness admits that he told one Blanchard that that thing was worth $100,000 as an item of evidence against the Driven-Well patent. It is incredible. A well which he states was a curiosity in 1859, and the construction of which he pretends to have understood, which became to his knowledge a subject of discussion as far back as 1865 as to who was the first inventor, Green or Suggett, notorious in the newspapers, and yet he had this piece of pipe in his possession which he now regards as worth $100,000 and yet took so little care of it; cut off portions of it; used it for purposes which he does not remember. His statement is certainly unworthy of credence, though immaterial as to whether or not this particular piece of pipe was used with a pump on it to draw water from the bottom of a dug well fourteen feet deep, but it tends to give its proper character and tone to the quality of the evidence that is introduced against us.

Commenting upon that evidence in the Cross case (all the material witnesses here being examined there), Judge Blatchford said, in his analysis of that testimony: "The evidence "as to the Preble Well fails to establish its existence as a "Driven Well, or one in which the process of Green was de- "veloped. The alleged inventor of it—William E. Tallman— "is dead. His brother, Moses T. Tallman, did not see it "constructed. All the facts testified to about it, and the "remains presented—the punctured piece of pipe, the copper "strainer, and the section of iron stovepipe open at both "ends—are at least as consistent with an apparatus for filter- "ing the water in the dug well in question while pumping "it up as with the Driven Well. With the copper strainer

" on the punctured lower end of the pipe, where it probably " was, if the pipe was in the well at all, there could have " been no Driven Well in the sense of Green's well." I will not read all of it. All the evidence of Moses T. Tallman goes to show that the well was not a Driven Well, and there was not in it any such process embodied as that of Green. The testimony of Abram Van Denburgh is not entitled to any more weight. On the other side the evidence is overwhelming that there was and could have been no Driven Well at the time and place in question; and here, following that reasoning of Judge Blatchford, we have printed in our brief a very careful analysis (with reference to the well in question) of whatever the Court may care to see on that point.

I now come to the so-called well at Naperville. Naperville is a little town in Illinois. There was but one witness in that case, and his testimony was examined and passed upon in the case of Andrews *vs.* Carman. That witness said that he had made a rod for driving down into the earth; that he had heard that these rods were used in flowing wells, but that he does not know where they were used. He simply took a rod, or at least made one, for the purpose of being used to make a hole in the ground, and he heard that in some places they put that rod down and took it out and there were flowing wells.

That brings us to a consideration of the prior publications. All, except one or two named in this case, were also set up in the Eames case, in which Mr. Justice Matthews wrote an elaborate opinion disposing of them all.

He describes a tool consisting of a tube with a kind of screw inside of it that goes down into the earth. It states that the object of that rod was to withdraw for examination a piece of the stratum of soil on the principal of a gauger running a tool through a cheese to ascertain the quality. (See page 1571 of the record.)

A tool of that general principle to go down into the earth to bring up a specimen of the particular stratum, so that

when the tube was withdrawn it should retain a portion for examination, is shown on page 1609 of the record, but there is no description of it at all. It looks like an auger to go down into the earth, but it indicates that it is from a volume of plates belonging to Rees' Encyclopedia. Several references from Rees' Encyclopedia were before the Court *in extenso* in the case of Eames *vs.* Andrews at the last term, and were overruled.

So there remains for our consideration simply one publication, and that is an extract from a book relating to Dr. Livingstone's travels in South Africa, and there it is stated that the negresses will sometimes dig a hole down into the earth as far as the arm will go. They will take a reed and a handful of grass on the bottom of that reed; will put the reed and grass down in the hole they have dug with the arm, replace the sand, and then apply the mouth to the upper end of that reed which will bring the water to their mouths, and they squirt it into a gourd and carry that away; and this nasty practice of negresses in sucking water out of a hole in the ground and spitting it into a gourd is seriously cited as an anticipation of a great invention.

I crave a careful consideration of our elaborate brief and its references to the evidence. I have commented upon everything in the case except alone the law point raised in the opinion of Judge Love, in which he contends that the patent ought to be declared void, because two years before the application there were Driven Wells made in Cortland, where Green lived, and that Green abandoned the invention.

He claims that the abandonment was actual, and also abandonment by statute. He claims that there is proof in the case that Green knew more than two years before he applied for a patent that there were such wells. We negative that. *There is no proof that Green did have such knowledge.* They do prove that before Green made his application there were in use in the town where he lived for more than two years a few of these Driven Wells. An effort is made to fasten on

Green a knowledge of the use of these wells for more than two years, but my colleague will give that portion of the testimony in great detail. My opponent, in reply to me, will claim that Bates, Woodruff, and Dr. Bolles called Green's attention to these wells. Two of these witnesses have heretofore been examined and passed upon in some other cases, but not before this Court. Green, in reply to them, was called and examined. He distinctly, generally, specifically, and in detail denies that he ever had any knowledge whatever that his invention was actually being used up to a very short time—about a month—before the time that he applied for his patent; and we urge that the distinct and positive testimony of an unimpeached witness of intelligence outweighs any amount of merely inferential evidence. For instance, we may say, as to one of their principal witnesses, Dr. Bolles—who they claim was a very prominent man, and that he had said something to call Green's attention to this invention—we prove by him that up to the spring of 1863 *he himself*, although a prominent physician in that town, did not have any knowledge of the use, the nature, or character of that invention. This shows that it cannot be inferred from the fact that there were wells of such a kind in town that a man passing through the streets and visiting the residences knew of them. I may pass down the street and see a hundred pumps on the sidewalk and yet there can be no knowledge to my mind whether or not those pumps and their pipes led down into an ordinary cistern or whether or not they employ this invention. (Bolles, page 1451, Q. 4, 8.)

And now, if the Court please (and your time is very valuable), as my learned adversary has had ten days' possession of our brief bearing upon the question of the construction of the statute, I may properly, perhaps, waive at this stage any further comments other than as to the construction of that statute.

The act of 1836 provides in effect that if an invention was in use before the patent was applied for the inventor would

forfeit the right to his patent without limit as to the question of time. That was a hard provision, to require the inventor to lose his invention unless his application in the Patent Office was actually made before there was any use of it, however brief. Then came the act of 1839, which we contend, and the circuit courts have so held over and over again, was in mitigation of the hardship of that particular act of 1836, and our contention is that the act of 1839 practically gave the inventor a limit of two years before his application in which he might experiment to test and determine its value, and that under that act a use to defeat the patent must be a public use over two years, with the consent or allowance of the inventor, and our patent was granted while that statute was in force; it was granted in 1868. Then the act of 1870 came, and that was less generous than was the statute of 1839 under our construction, for the statute of 1870 now distinctly says that two years' use before the application for the patent, irrespective of any act of knowledge or consent on the part of the applicant, is a complete bar to the patent.

We trust that we have presented the case by way of an opening sufficiently clear under the requirements of your rules. My colleague will call the attention of the Court to our very careful summary or digest of the law touching the construction of that very interesting statute. It has never been, as I understand, definitely passed upon by this Court.

The conclusion, it is submitted, to which the Court must come is this:

The Purdy Well was wholly different from the Driven Well in construction, principle, and operation. So also the Naperville *hole in the ground.*

The Tallman Well was too vague and uncertain as to construction to be of any value as evidence against Green.

The Independence and Warsaw Wells were both misplaced as to time by five years.

All of these claimed wells were mere isolated, abandoned, and fruitless experiments and of no avail against Green, even though he *were a subsequent* inventor.

That there was "NO ABANDONMENT" was fully decided in the Beedle case last term.

The statute of 1839 required that the two years' use prior to Green's application should have been with his consent and allowance *as inventor*. No such consent is proved here.

We ask that the decree of the court below be reversed.

JOSEPH C. CLAYTON,
Of Counsel with Appellants.

Mr. KEASBEY'S CLOSING ARGUMENT FOR APPELLANTS.

Mr. KEASBEY. May it please your honors, I have argued the questions concerning the Driven-Well patent before this Court. Now, I shall endeavor not to repeat myself or to discuss any of the questions which I regard as settled by the decisions of the Court in the case of Eames and in that of Beedle *vs.* Bennet, but confine what I have to say to the matters which I consider to be new in this case.

I think these matters are the alleged anticipations of Green by four different isolated wells and by the alleged proof that Green consented to and allowed, as inventor or discoverer, the public use of his invention for more than two years prior to the application for his patent.

I regard the question of abandonment by reason of his delay in applying for a patent to be fully covered by the decision in the case of Beedle *vs.* Bennet which was determined upon an agreed state of facts, which statement of facts involved—comprised in compact and clear terms—the general result of all the evidence that had been taken in this case, as well as others, for the Court will observe that in these cases the testimony has been interchanged. The evi-

dence taken in one case has been stipulated into another, as, for example, the evidence concerning the Independence Well, taken in this very case, was stipulated into the case of Andrews *vs.* Cross, decided by Mr. Justice Blatchford.

Now, in order that I may not find my time running away from me before I discuss the particular matters I have referred to, I will take up the matter of the Independence Well first, and with regard to that I wish to make two remarks—first, I call the attention of the Court to the fact that in the opinion in this case given by Judge Shiras this expression is used concerning the Independence Well: "It does not appear, however, that any other wells came into use by reason of the driving of the one under consideration, and if the decision of the Court depended solely upon the effect to be given to the driving of this one well we might well doubt whether it would not be proper to treat it as a mere isolated experiment, which would not be held to defeat the rights of an independent inventor."

That is in the decision of the Court in this case against the complainants. With regard to the Independence Well another consideration is this: That the testimony given in this case was, in all its essential features, in all its fullness, presented to the Court in the case of Andrews *vs.* Cross, and when the learned gentleman began the discussion of the Independence Well by saying that the testimony on the subject of that well is new in this case he made an error of statement. When he said that two or three or, perhaps, four or five of the witnesses examined here were also examined in the case of Andrews *vs.* Cross he made what I regard as a very gross error in statement, because, on looking at the opinion of Mr. Justice Blatchford in that case, I find that since the counsel for the defendant abandoned the case and made no argument for him the Judge took great pains to set out in his opinion just what witnesses were examined, just what testimony he relied upon, just what proof he had before him, and that a list of the witnesses ex-

amined in that case is given in the opinion. They are thirty-three in number; not two or three or four or five, but thirty-three witnesses, and the reading of their names would recall all the chief witnesses who have been alluded to by the counsel who has argued the case on the part of the appellees—Sherwood, Marinus, King, Warne, Francis, Williams, Tyson, McEwen, Brown, Crandall, West, Fargo, Jed Lake, A. R. West, Wiley, Chandler—I need not read them all. Thirty-three witnesses were examined in that case, and substantially the whole testimony was before Mr. Justice Blatchford, and with regard to the testimony, after he had fully considered it with the care for which he is so remarkable in the investigation of this class of cases, he says: "As to the Driven Well alleged to have been put down at Independence in April or May, 1861, it is quite clear that the witnesses who testified to that date are mistaken, and that the well in question was put down in May, 1866, the evidence to that effect is very complete and detailed and minute." Is that view of this evidence a just view? Is that view entertained by Mr. Justice Blatchford upon substantially the same proof a right view of the testimony?

THE CHIEF JUSTICE. Is there in that opinion a statement of what evidence was testified to?

Mr. KEASBEY. A statement at considerable length.

THE CHIEF JUSTICE. Is there a reference to Kimball's and Sherwood's testimony—the keepers of the hotel?

Mr. KEASBEY. Let me run over a little of it.

Mr. JUSTICE BLATCHFORD. Mr. Keasbey ought to have stated that whatever testimony on the subject of the Independence Well was introduced in that case—I remember the opinion gives the names of the witnesses—was not taken in the cause; but was this very testimony taken in the Hovey case which was stipulated to be considered as in the Cross case?

Mr. KEASBEY. It was the testimony taken under the supervision of the counsel who has argued this case, and his own testimony was among the rest.

Mr. LAKE. Allow me. The opinion of Judge Blatchford in the Cross case shows that of about seven witnesses whose testimony was taken on the part of the defendants in the Cross case the same testimony appears in this case, and the rest was testimony taken on the part of the complainant. What I said to the Court was that of the witnesses examined by us who were in the Cross case there were only five or six or seven, and that is all that appears there, that we examined. The balance of the thirty-three are the witnesses examined by them on their side, not on our side. My statement is correct.

Mr. KEASBEY. I read: "The defendant was also examined as a witness for himself in this suit in August, 1880. The defendant also took in this suit, at Independence, Iowa, the depositions of Thomas Sherwood, Thomas A. Marinus, H. A. King, George Warne, A. J. Francis, A. F. Williams, Thomas H. Tyson, and S. P. McEwen, in April, 1880."

Substantially all the witnesses whose testimony has been so earnestly urged here in this argument. Then the Court goes on to say——

Mr. LAKE. Those are the seven witnesses that we examined there.

Mr. KEASBEY. The Court goes on to say, "Under a like "stipulation and a like notice the following depositions are "made evidence." It then mentions all the other depositions that were then taken. I mentioned the number of witnesses admitted on both sides of the case, but I am occupying time on matters that I ought to pass over. It will be found plain, I think, when you come to examine the testimony of these witnesses in the Cross case, that substantially the same proof was offered in that case, and I have stated the conclusion to which the judge arrived. Now, what was the fact that was attempted to be proved with regard to the Independence Well, and what were the results which are alleged to have flown from that fact? I submit that the fact itself was an incredible one, and that if the result which fol-

lowed took place they made the occurrence of the fact utterly incredible, because those results are in themselves incredible if the facts were true.

It is said that in 1861, early in the year, a man whom nobody knows, whose name or place of residence nobody can tell, came to a hotel in Independence and there exhibited a box of tools, galvanized pipe, and all the tools which we now recognize as the tools applicable for the making of Driven Wells, and said—two or three witnesses speak of it—that he had a PATENT for a well that he could make a well without digging, and that on the next day he went to a particular point in an open lot across the river and there drove a well, which several of the witnesses saw; that the well remained there, some say, a few weeks; some say a few months; one says a few years, and vanished. There is not a trace of the man who drove it; not a trace of any result, although it is stated by the witnesses that it was a matter of great public curiosity, although they allege it created the same interest that was excited by the Driven Well of 1866, although it was regarded as a novelty; yet it passed away from public knowledge and was not commented upon at all by any of the public papers of the time. That is the fact that is claimed to be proved.

Now, I want to state to the Court certain facts which are undoubtedly true in this case, which are admitted to be facts, in order that from them I may show how true it is, as was determined in the case of Andrews *vs.* Cross, that the testimony of these witnesses, perhaps well meaning, as carefully given as is possible in an attempt to recall facts after the lapse of twenty years; that all this testimony was simply the misplacing of the date of the fact which they vaguely remembered, happening many years before.

These facts are true, admitted in the cause, that at that same hotel, in May 1866, after the Driven Well had become a well-known public thing, and after its utility and value had become so far demonstrated as to secure its use by the

British government in their expedition to Abyssinia, four men, whose names we know, one of whom was named Charlie, came to this same hotel, and they had their tools for making wells in a box in the basement of the hotel. From that hotel they went out to the very spot alleged to have been occupied by the well five years before, and there, in the presence of many of the community, a Driven Well was made. It became a subject of public comment in the newspapers of the day, of the next day, and was a matter of wide town talk, and from that time the Driven Well there (as it was in so many other localities throughout the country about that time and almost everywhere since) became an accomplished fact—a well-known thing.

Are these witnesses whose testimony has been given with regard to a well in 1861 speaking of a fact which they know, and know with such knowledge and can state with such convincing force as will satisfy the mind? Are they speaking of what they saw in 1866, or are they speaking of another fact of the same kind which they saw in 1861, or is it true that two such remarkable things in 1861—men coming with a PATENT—there was no such thing as a patent at that time for Driven Wells, but one hundred and fifty patents in 1864, taken out in consequence of Green's invention—is it true that two men or one man came to the same hotel with a box of tools and put it in the basement and carried it to the same spot and drove a well, which in a few weeks or in a few months vanished and was no more heard of; or are these witnesses who think they saw a well in 1861 speaking of one which they did really see in 1866, and the circumstances of which are clearly shown in the testimony in this cause?

In order that the Court may see what is the nature of the testimony which is urged as proving that this well was made in 1861, I want to occupy time enough to run over briefly the essential parts of the testimony of these witnesses who allege that they saw a well in 1861, extracted from the

book, and those parts of their evidence which relate only to the matter of the actual knowledge of the well, so that the Court may see what is the character of their testimony—in order that it may be seen, as I think I shall conclusively show, that they are speaking vaguely, looking back through the lapse of years, and merely misplacing the date.

Dr. Warne says: "I saw the first well that was driven on the land heretofore described. The men in question that were driving the well stood on a box, and with a sledge-hammer were driving a tube or round bar of iron into the ground. Being a little inquisitive, I asked him what he was doing, and he said he was making a well. Not seeing anything that looked like a well and not even knowing that the tube was hollow, I considered by his answer that I was sold; asked no more questions, and proceeded home." That was what Dr. Warne says. Kimball says that a guest at the hotel "told me he had an iron pipe that he could drive into the ground and fasten a pump to it in a few minutes' time and come to water. He took me down into the basement of the hotel and opened a wooden box. In this box were sections of galvanized iron pipe resembling gas-pipe, in pieces about three feet long. He showed me sharp points that he screwed on another piece, and then told me they would drive this into the ground and add on sections until they struck water. The next day or day after he wanted to show me what he could do. We put the box onto a team and went across the river, and I went with him. We went and got two horses and sledge or maul—I forget which—and drove down several feet, fastening on more pipe, so that he had to get onto these horses or plank to drive the pipe down. I went back to the hotel before he had completed it. The next day I went over with him again, and saw them pump water."

Mr. JUSTICE HARLAN. How accurate is this description?

Mr. KEASBEY. I admit that they described it very imperfectly. No one described the entire making of the well, but

they described the driving of a rod into the ground for the purpose of procuring water and placing a pump on it. I say they are evidently referring to the well driven in the same spot in 1866, and I shall show it, I think, conclusively by some very striking references to their testimony.

Mr. JUSTICE HARLAN. If they were not mistaken as to the date that there was a well there.

Mr. KEASBEY. If they are not mistaken I would come to the conclusion with Judge Shiras in this case that it was merely an isolated experiment, and that it would be proper to treat it as a mere isolated experiment, which would not be held to defeat the rights of an independent inventor; that is what the judge said from whose opinion we appeal.

Tyson says: "I saw them put down the well. I saw the tube; they had a plug in the lower end of the tube." Manifestly it could not have been driven down. "After they drove the tube in the ground they had an iron rod that they put down in the tube and drove the plug out." He states that there were perforations on four sides of the tube. The pipe with the plug on was driven down first and not the rod first.

McEwen says he did not see the well made; does not even say he was told how it was made. He was asked how it looked and he said, "Well, sir, it was an iron tube driven down in the ground and standing above the ground about eighteen or twenty inches and a small cistern pump, I should call it, attached." He says he had "used this well pumping water." He said one of the men was called "Charlie."

McEwen, on cross-examination, says: "It was called an experimental well," and he thinks they talked about a patent. He says it made a good deal of excitement.

A. F. Williams says: "Well, I saw some men at work there, but I can fix no date in regard to the time. I should think it was about the last of May or first of June. I passed by there; saw them driving down the well when I passed by there. I saw them driving a long iron rod. The first

time I saw them I did not stop and ask them questions; saw them there at work. I went by there the next day about the same time and there were some men there pumping water out of the well and drinking."

On cross-examination, being asked what appliances or instruments they had, he said: "They had something, standing on it; it was elevated some distance from the ground; they were pounding on it; it was an iron rod or something." He could not describe any of the workmen.

John H. Campbell testifies: Q. At any time when you saw them play (cricket) there did you see a well in that vicinity that attracted your attention by its method of construction? A. According to my best recollection, I did. Q. What kind of pump was at this well? A. The pump itself was an ordinary iron pump, according to my best recollection. Q. What was this pump fastened onto? A. Well, I suppose it was on the iron tube; it looked like it. Q. How was this tubing put in the ground? A. I think it was driven in. I was along there several times when they were putting it down. Q. What did they drive with? A. Can't tell whether it was wood or iron mauls or mallets that they had; don't remember. Q. Did you pump water at this well? A. Think I did. Q. Did they stand on the ground when they drove this tubing? And, if not, state what arrangements they had. A. I do not remember as to that. Q. Did you see the point to this tube they put into the ground? A. I presume I did, but I can't tell you positively now. Q. Will you swear positively that you did see them drive a tool with a maul or sledge? A. I would not positively.

J. E. Trexler testifies: Q. State what you saw them do there. A. Well, sir, I saw them driving a "Drive Well"—a pipe such as they used for Drive Wells.

He is speaking now after the lapse of nearly twenty years about a thing which has become familiar; but, of course, if he saw anything then it did not impress his mind as a

Driven Well, of which no one could then have had any conception whatever. Q. What did they drive it with? A. I think they drove it with a sledge; it was a heavy instrument of some kind; I took it to be a sledge. Q. About how long was the pipe you saw them driving down? A. Well, I supposed it to have been about sixteen feet; I judge it to have been "that, just with an eye measure."

He speaks of a span of horses—wooden horses—to drive from. When asked to describe the pipe he says: "Well, I took it to be an iron pipe. They tied a point on the bottom of it; I could see that. Q. Was there any holes in the point or end of the pipe? A. As near as I can see it across the street there were holes in it; I am certain there must be holes in it." That is the kind of testimony.

S. S. Allen says: "Well, in 1861 or 1862 I saw men there *driving wells and putting them up,* or driving iron tubing into the well and pulling them up," as if it were a repeated thing. Q. About what was the size of the tubing they drove? A. I should think one and one-half or two inch tubing—about the size that is commonly used now for Drive Wells. Q. How deep did they drive this tubing into the ground? A. Could not say; should say over eighteen feet and under twenty feet; from recollection would say not far from fourteen to sixteen feet. On cross-examination: Q. Were you present during the construction of the well that you say remained there two or three months? A. I could not say—and here is a remarkable statement—"I could not say, as they *pulled up the tubing every two or three days and changed it from one hole to the other for two or three weeks.*" That is entirely inconsistent with the statement of the other witnesses, and perfectly consistent with the fact that he was witnessing the endeavor of men going about with patent wells in 1866 driving their wells and pulling them up from time to time until they got them to work successfully.

Q. What kind of an end was there to the tube that was driven into the ground? Describe that. A. I do not re-

member in particular. I should say it was like any other tube with a plug in the end that they drove down, and with some holes bored in the side of the tubing. He states that he is not positive that it was not in 1863, which, of course, makes it a matter of no consequence at all. See what Hageman, who has been talked of so much, says. He was a hotel-keeper. He produced a deed made in 1862 and says he saw the well before that. He does not say how long before; he says: "I saw them when they were putting the well in; it "was quite a new thing to us—driving a pipe into the "ground and pumping water; I used to go over in the even-"ing and look at it and pump water out of it. There was a "base ball club ground just west of the well, and we used to "go over and look at them and lay around and drink water "out of the well. Q. Now, state particularly, if you please, how this well was made." This is his description: "A. The first I saw of them I saw them driving pipe down. I staid there and looked on awhile and went away, and the next time I saw it a pump was on and they were pumping it. Q. How long did it remain there? A. I think it was there *several years*. I don't know just the time. Q. Was there claimed to be a patent on this well at that time? A. Well, I believe there was something of that kind; I cannot say exactly." Asked again if he did not understand that it was patented he said: "A. No; I did not understand it was patented, come to think." Now, see how natural this is—"come to think, it was driven there to show people they could get a cheaper well than by digging and walling up. They tried to put in other wells. Q. How do you know they tried to put other wells down or offered to? A. Well, we tried to pump it dry one evening and one of the men said they would put us in a well, and if we could pump it dry he would not charge a cent for it."

Just the way they talked about Driven Wells after the patent was issued. Yet he says "it was five or six years" before he saw another well of the kind. Stromen, whose

testimony is so much relied on, says he saw a well while he was working for Baxter Adams, a roadmaster. He was asked: "Q. Describe the well as to its appearance?" To which he answered: "A. It was a small-sized well or pump, not very high up, set on a plank floor about three feet by four with a trough under it, where we used to pump water in to water horses." Hovey himself and several witnesses say it was simply a pipe stuck in the ground, but this man says there was a plank floor about three feet by four. "Q. What was there down below the pump to draw water through? A. A metal tube. Q. How was that metal tube put into the ground? A. I did not see it put in; of course, I cannot say how it was put down. Q. Did you hear anything said at the time you saw the well as to how the pump was put down? If so, state what was said on that subject. A. I never had any conversation about it; they told me it was a well without any digging. Q. After it was moved did you see the tube that went into the ground or any portion of it? A. What was said to be in the ground? I could not see a portion of what was said to be in the ground. Q. How much of this tube could you see. A. A short piece of it—two or three feet long. I did not measure it; I don't know the exact length. Q. State whether this part that you saw stuck up above the ground or not. A. It was not; it was in *the Blacksmith Shop I saw it; I saw it there after it was cut off.* Q. What I meant was whether the tube you say was in the ground, whether any part of it stuck up above the ground so that you could see it? A. No. Q. Then you did not see any part of the tube that was in the ground, as they said? A. It was all covered up with the exception of the pump." He says the Blacksmith Shop was on the north side of Main street and occupied by Kays, and that in that shop he saw a piece of tube, and they said it was a piece of tube of the Drive Well, and that was the first time he ever heard of a Drive Well. Sherwood says: "In the winter or spring of 1861 a gentleman stopped at the hotel and exhibited to

C. T. Kimball and myself—I don't know what he called it—that he could drive it into the ground, attach a pump to the top, and would pump from a well. The idea was that he could pump water from the ground—make a well. That was the first I heard of it. Q. Describe this thing that he said he could drive into the ground and make a well? A. According to the best of my recollection—well, it was a hollow tube, and on one end there were holes in the tube. He claimed by driving that in the ground and attaching a pump you could pump water the same as from a well—making a well of it. Q. State whether anything was said about how far he had to drive into the ground; and, if so, what was said. A. *I cannot remember. I took but little stock in it,* but Kimball did.

"Q. Did you at or about that time hear that this man had made a well as he told you he could? A. Don't remember that he said he had driven any here. A short time after he came back to the hotel and said he had driven one at the other side of the river."

Sherwood says he saw the well and pumped water from it. He states: "I remember distinctly when I last saw it there was no support around it; it was simply a tube driven into the ground and supported itself." He says he could not tell whether it was before or after Kimball left the hotel.

"Q. Was Charles T. Kimball the one who showed you this pipe and explained its use? A. No; it was the stranger stopping at the house." There was a significant question asked of Mr. Sherwood: "Q. What was the man's name and where was he from?" and Sherwood, the keeper of the hotel, said: "A. I can't state; *that is what bothers me.*"

In reply to a question as to whether he had ever seen a pump or tube of the kind before or since, he answered: "I might have seen them before"—before 1861 he might have seen such tubes—"and since, but not particularly to go and examine them."

"Q. Did you ever see this pump and tube after it was

shown you in the cellar? A. I can't say that I ever did, for I did not see the well driven."

And now comes Rachel Kimball. Your honors will remember how very earnestly the learned counsel on the other side contended that Rachel Kimball remembered this transaction from the date of the birth of her child, or some fact of that kind. The trouble is that she does not remember the transaction at all. She remembers nothing of it from which she could derive a particle of information about this well. This is her testimony. She was asked if she did hear about the well, and she says: "I did hear some talk of such a well. Q. State what was said in regard to the way the well was made. A. I did not hear anything as to how the well was made. Q. State what was said in regard to how they could make a well."

She was pressed with leading questions.

"A. I don't remember of hearing anything said as to how it could be made. Q. State what was said about it. A. It was a conversation I had with Mrs. Sherwood in the kitchen about putting a well in the cellar. She objected; she said it was unnecessary; that well was the best in the town, and she did not want any better. Q. How did they propose to make a well in the cellar?"—jumping to the conclusion that it was these men who proposed to make a well in the cellar, which Mrs. Kimball had not said; she simply replies: "I do not know."

That is all the testimony of Rachel Kimball.

A. J. Francis was asked: "Q. Describe the well or what you saw of it. A. Well, there was a pump in it that we used to get water from and drink; it stood on a grass plot. Q. Onto what was the pump attached? A. I don't know as I can remember. It seemed to set right on the plot of grass; don't know what was in the ground. I did not see it put in there. Q. Was there anything between the bottom of the pump and the ground that you could see? If so, state what it was. A. I can't recollect whether there was or not now."

George Hovey, the defendant, says he saw a well there. The grass grew right up to it. It looked as if it had been driven in there. Says he, "I did not see the well put down; I guess they didn't stick it down, though I don't know; I didn't see it drove."

I have spent some time in going over this testimony to show what is the real nature of the proof by which it is attempted to be shown that the remarkable fact occurred that, at a distant point in Iowa, a man who claimed that he had a patent, and who was making experiments and wanted to drive a well for the purpose of being able to drive other wells, produced a well of this kind in the spring of 1861, before there was a patent on a well of any kind, and before any attention was attracted to the subject, and that he did it; drove the well; made it successful; provided a place where the people of the town could pump their water; created great excitement in the town, and the whole thing vanished and nothing more was heard of it, and the man's name is not known to this day, and nobody can tell where he came from or find a trace of him at all. That fact is so remarkable that when we come to examine this testimony it is necessary for us to see what is the mistake that these men have made, if they are, as I do not doubt they are, trying to be honest and state only what they endeavored to remember.

Now, I want to allude to two matters which seem to me completely to prove that all this testimony relates, as far as it is clearly within the minds of the people who give it, to the well made in 1866. It is a fact in the cause that J. R. Kays never came to Independence, Iowa, until 1865, and that in 1866 he, for the first time, established a Blacksmith Shop just across the main street, just north of the spot where this well was alleged to have been made; that there was no Blacksmith's Shop there before. So that when the well was made, in 1866, John A. Kays' Blacksmith's Shop was directly opposite, on the main street. Now, there are sixteen wit-

nesses—I have counted them and I have their testimony here abstracted in order that it may be carefully referred to —there are sixteen witnesses who, in more or less distinct terms, allege that there was a Blacksmith's Shop there when they saw the well, which they place in 1861. It is worth while to look at what the witnesses say, for observe how important a fact this is. When men are endeavoring to look back over years and trying to recall something to their minds that they say took place nearly twenty years ago, if they group the surrounding facts that they remember and call attention to things which are inconsistent with that date, it becomes irresistible that they are speaking of another time, when such things did exist. Mr. Kimball says that he saw the box in the basement of the hotel; that Fargo was there; that there was a Blacksmith's Shop there then or soon after; borrowed a pair of horses and a maul.

McEwen says he thinks there was a Blacksmith's Shop kept by Kays at the time when he saw the well.

Dr. Warne says: "My impression is that there was a Blacksmith's Shop on the corner."

Campbell says: "I know there was a Blacksmith's Shop opposite, either then, before, or since."

Hovey, the defendant, says the nearest building, he thinks, was a Blacksmith's Shop, across Main street to the north; did not know the man who was running it; it was occupied at that time. "*I am sure it was there at that time.*" There is the defendant in this case who asserts that at the time when he saw this well he is sure there was a Blacksmith's Shop there occupied by a man he did not know. Ought not that to settle the matter of misplacing the date?

B. C. Hale remembers the Blacksmith's Shop; he says "it was a brick, I believe."

Marinus recollects a Blacksmith Shop there at the same time; "is not positive it was not there at that time;" there was a Blacksmith Shop.

J. J. Travis says: "There was a Blacksmith Shop directly opposite, and a man by the name of Kays lived there."

Stephen Marquette says: "I think Kays was working in his Blacksmith Shop;" in 1861 "*there was* an old house torn down before the Blacksmith Shop was put up; I don't remember whether it was in 1860 or 1861." There was an old house torn down and the Blacksmith Shop put up, but that was in the spring of 1866, and yet Marquette, called by the defendant in the cause, says "there was an old house torn down before the Blacksmith Shop was put up; I don't remember whether it was in 1860 or 1861, but it was there when I saw the well."

Now, therefore, these men are all sending their memories back to the time when the Blacksmith Shop was there, and they believe that was in 1861, when, in point of fact, beyond all contradiction, the Blacksmith Shop was not built until 1866; and when these men are talking about the well by reference to the Blacksmith Shop they are clearly showing that they are speaking of the date of 1866 and of the well put down then.

John M. King says: "My impression is that there was a Blacksmith Shop across the street north of the well."

A. H. Fonda "thinks there was a Blacksmith Shop directly north of the well across Main street at the time the well was made."

Mrs. Parker says, as nearly as she can remember, the well "was opposite where her house now is; she lives where Mr. Kays' Blacksmith Shop was; the well was nearly opposite there, on the south side of Main street."

Leitner S. Stroman says he saw a piece of the very tube of this well in the Blacksmith Shop. "The Blacksmith Shop was north of the corner, directly north from the corner where the well was, when he worked for Baxter Adams, who was a roadmaster, elected first in 1860, and he worked for Adams off and on at different times." He went to the shop for a crowbar; he was a laborer and wanted a crowbar to turn a

stone, and he went to Kays' Blacksmith Shop to get a crowbar, and it was near that Blacksmith Shop that the well then existed, which he says was 1861. It is perfectly clear this was in 1866, because there was no Blacksmith Shop there before. He says it was Kays' Blacksmith Shop, though he did not know his first name. At the time he saw the well, Mr. Kays was occupying the Blacksmith Shop he spoke of, but he did not know how long he had been there—"four weeks anyhow," he says.

See how that corresponds; the Blacksmith Shop was made in the spring of 1866; the well was put down in May, 1866, and when he speaks about the well and says he remembers it—remembers the Blacksmith Shop, remembers getting a crowbar from the Blacksmith Shop—and when asked how long the Blacksmith Shop had been put there he spoke of it as a new thing, which had been there, he could not tell exactly how long, but three or four weeks anyhow, it becomes plain that he was speaking of 1866, when the Blacksmith Shop *was* built.

Naylor thinks there was a Blacksmith Shop on the southwest corner of block 22, directly north of where he saw the well, but would not be positive.

Cobb says there was a building opposite. To the question, "Was it a Blacksmith Shop?" he replied, "Yes, sir."

They are not all; I found more as the counsel were going over these witnesses.

Martin Rust, whose testimony the counsel urged so forcibly, says he saw the well close to a big tree and close to what used to be occupied as a Blacksmith Shop. It remained there about one week. There was a little box-house built that season close to the Blacksmith Shop.

He is the sixteenth of the witnesses who swear that when they saw the well, which they state was in 1861, and which I have no doubt they believed to be in 1861, they saw also the Blacksmith Shop and connect the well and the Blacksmith Shop; and the Blacksmith Shop was there only in the

spring of 1866, and then in May of that year, on the same spot, by men who put it down under the same circumstances and who stayed at the same hotel, a well was driven down while a Blacksmith Shop did stand there. Is not the conclusion irresistible, therefore, that all these witnesses have misplaced the date merely and are speaking about the well of 1866.

But there is a matter of very much more convincing weight, to which I will now refer. Kimball is the man upon whose testimony the defendant relies more than any other. He was the man who said that the guest at the hotel asked him to go down to the basement and see the box of tools; requested him to go with him to make this well as an experimental well. Kimball is the man who says that he did go with him from the hotel across the river and was with him part of the time when he was putting down that well. Kimball, on the 12th of December, 1878, made an affidavit to be used by the defendant in resisting a motion for injunction or for some other purpose, in which he described these facts that occurred, as he says, in 1861, and described them with such particularity and minuteness that there can be no escape from the conclusion that he was stating what he then believed to be the facts with regard to seeing the guest at the hotel and going with him to build the well. He says in that affidavit, after detailing the facts which have been commented on here, his going with him and staying while the well was being partially built—he says this on page 1944 of the record: "I further remember about this pump and well; this man told me"—the man who was taking him over to show him this well in 1861—"this man told me that there was a patent on a well made by driving a pipe down into the earth and inserting into that a machine that folded and opened on the principle that an umbrella opened and folded; that the ribs of this machine were steel knives and when below the pipe could be opened and turned around and cut out a reservoir as large as a barrel, and this dirt could be

pumped out by a sand pump. But this man claimed that in sandy or gravelly soil he could make a well without cutting out the earth; that the gravel and sand were a sufficient reservoir. We tried it; when I described and succeeded in making the well, it was a success. *I am sure this was in the early spring of* 1861, *from the circumstances above stated.*"

I hold in my hand the Chamberlain patent of January 30th, 1866; it did not exist until that date, and Kimball, who heads the witnesses of the defendant to prove the fact that a Driven Well was driven down and used and then vanished in 1861, when he comes deliberately to state the facts in an affidavit, without any cross-examination, and undertakes to describe the circumstances that occurred in 1861, goes into details and declares that the man whom he says drove a well in 1861 described a patent which was granted five years afterward. There is the Chamberlain patent, a very peculiar patent. After the Driven Well was a well-known thing a man got a patent, not for driving a well, but after driving to the bottom of the well, taking an umbrella-like screw with a flange and turning up the soil so as to make a reservoir below—a very remarkable patent, obtained January, 1866, which Kimball describes in this affidavit relating to occurrences alleged to have taken place in 1861. Need I spend time further to show that these parties are mistaken as to the date? If Kimball is wrong and Sherwood is wrong, if all of those sixteen witnesses who say they saw the Blacksmith Shop there are plainly mistaken, is it worth while to spend time to show by a closer examination of the testimony that it is true? As was said in the case of Andrews *vs.* Cross, that "it is quite clear that the witnesses who testify to that date are mistaken, and that the well in question was put down in May, 1866; the evidence to that effect is very complete and detailed and minute."

I do not think it necessary to occupy much time with the other wells. If I were to undertake to examine the testimony in the Warsaw Well and to state what, as it seems to

me, is the fair conclusion from that testimony, I could not do so in as forcible language as was used by Judge Nixon in his decision in the Green *vs.* French case, in which that well was the most important matter of defense. It was then disputed in the most thorough way. I argued it myself, and in the decision of the case Judge Nixon, in an opinion occupying a page and more of our brief, states in a most cogent manner the grounds in which he determined in that case that there was no real proof, no such proof as a court ought to rely upon in judging of an anticipation of our invention by the driving of the Warsaw Well, and I only refer to his decision cited in our brief as a better statement of the matter than I could make if I undertook to go over the testimony now; but I wish to call the attention of the Court to one matter alluded to in that opinion which, it seems to me, has great force. The man who put down the Warsaw Well alleged that he put the well down and took it up again after several years. In 1867, when driven wells had become common and men were going about the country putting them down, some men, including those very men whose names occurred in relation to the Independence Well came there to put down a well for this very Mr. Buxton. In the very same place he wanted to make a Driven Well for the man who alleges that some years before he had himself made a Driven Well in the same spot. He was employed to make that Driven Well. When he came into the shop to do it, Mr. Buxton asked him, "Do you think you can make a Driven Well there?" and Mr. West—"I think that was his name—said that he could and he did put a Driven Well down." Is not that conclusive proof that Mr. Buxton did not make a driven well himself in that same place years before and abandon it for another well?

With regard to the Tallman or Preble Well, that was the subject of the testimony and examination in the case of Andrews *vs.* Cross, and Mr. Justice Blatchford goes over the testimony with great particularity and care. He says:

"The alleged inventor, William E. Tallman, is dead. His brother, Moses T. Tallman, did not see it constructed. All the facts testified to about it and the remains presented—the punctured piece of pipe, the copper strainer, and the section of iron stove-pipe open at both ends—are at least as consistent with an apparatus for filtering the water in the dug well in question while pumping it up as with the Driven Well, with the copper strainer on the lower punctured end of the pipe, where it probably was."

For, let it be remembered, when this matter assumed some importance they dug the well out to find what was there, and there in the bottom of the well they found a copper strainer—a strainer like those which you find on a watering-pot—the only apparent use for it being to put on the bottom of the pipe set down in the bottom of the well in order to strain out the dirt. There was the strainer found after years in the bottom of this open well. Your honors will remember that this was an open well—a well which is proved by numerous witnesses never to have been without water; that the man Tallman wanted to rig a windmill to work his well for his cattle; that in order to do so it was necessary, apparently, to use a pump inside of the well and to lengthen the pipe of the pump, but it is manifest that in doing that he used that pipe, if this is the pipe—there is no definite proof of it—in order to let his pump deeper down into the well, and that on the bottom of it he had the strainer which was found afterwards in the well, and that the whole purpose of this pipe was, as Mr. Justice Blatchford said: "With the copper strainer on the punctured lower end of the pipe, where it probably was, if the pipe was in the well at all, there could have been no Driven Well, in the sense of Green's well; if there were sand in the bottom of the well, which was likely to be drawn in through the punctures in the pipe when used in the dug well, if these punctures were at the bottom of the well, raising up the pipe might raise it above the supply of water when the water was low; but putting the strainer on

the end of the pipe and surrounding the strainer with the section of stove-pipe would keep out the sand, even when the water was at the lowest, and permit the water to pass, and when the water was high enough to pass through the punctures in the pipe it would be so far above the sand as to be clear of the sand. All the evidence of Moses T. Tallman goes to show that the well was not a Driven Well, and that there was not in it any such process embodied as that of Green. The testimony of Abram Van Denburgh is not entitled to any more weight. On the other side the evidence is overwhelming that there was and could have been no Driven Well at the time and place in question."

I am not sure whether Getman was examined in that case or not, but Thomas J. Getman, as counsel on the other side informed the court, was one of the men who went with Tallman and was engaged with him in making this arrangement of his open well in the field to enable him to rig his windmill upon it, and therefore he knew something of how it was made. His testimony is this: "He said he thought the pipe was driven in the ground slightly." He was speaking of what he had said in the testimony "was driven in the ground slightly," and wants now to take it back, as he never said it under oath; "thinks it was not driven into the earth at all; said it was his impression once that it might have been put into the ground first to steady it, and he has said so to different parties, but said he would not say it was put in the ground six inches or four feet. These were the words he had used. Mr. Moses Tallman told him that he had seen Mr. Keach, and Mr. Keach said that he would give him $25.00 if he would swear that the iron pipe was driven into the ground at the bottom of the well below the *perforated holes*, but said he would not agree to pay it till after the decision of this suit." Getman said, "I will not swear it for $25.00 nor $2,500.00, nor any other sum; there has been too much manufacturing evidence in this town already over this thing," and then he goes on to describe: "When this wind-

mill was put up and this iron pipe inserted there was about two feet of water in the well, and do not know there was any fall off from the time it was deepened until the windmill was put up; nothing to his knowledge was said about driving the pipe down into the bottom so as to get water below the bottom of the well; first heard of a Driven Well, he thinks, in the fall of 1861, on the Cortland fair ground; shown the piece of pipe claimed to have been in the well, says it *looks* like the piece, and bears the description he gave to Mr. Suggett, the counsel appearing for defendant; has talked freely with both sides in this case, as freely with one as with the other, and stated to each side what he recollected; thinks his memory has been refreshed on some points on both sides by the frequent conversations; *his recollection was that the perforations in the pipe were above the earth in the water.*"

There is another witness, a man named Ezekiah Klock, who is still more explicit on the subject. Klock was a man who worked on the farm and knew how the well was put down, and the substance of his testimony is that this was not in any sense a Driven Well; it was not even an accidental Driven Well, much less was it a Driven Well made with the intention of making such a well, but was merely a piece of pipe put down in the bottom of the well for the purposes that are mentioned by Judge Blatchford. Here is what Klock says: "He took up the pump and brought a piece of gas-pipe to the shop and had it punched full of holes and battered up at one end of this pipe." He would not batter up the end he was going to drive down, and said he was going to attach that to the lower end of the tube of the pump to prevent its drawing in any dirt or sediment of any kind. He did not see him attach this to the pump; was not present when the pump was replaced. It was in the summer of 1860 he thinks this was done. His first acquaintance with Getman was in the spring of 1860. "The piece of pipe that Tallman took to the shop and had punched

with holes, to the best of his recollection, was flattened at the end; it could have been driven in soft ground; was not present when the tubing was attached to the windmill pump, and does not know whether the tubing was driven into the bottom of the well or not; has looked down in the well and should think the lowest he ever saw the water it was twelve feet to the water, to the best of his recollection."

The Purdy Well or the Milwaukee Well is so described by Judge Shiras in his opinion as to make it perfectly manifest that it was not a Driven Well. I wonder how it could be deemed by the judge an anticipation, when by the description which he gives himself it was nothing but an open well or what we might understand as an artesian well. It is very distinctly declared that a cylinder of one diameter was sunk down into the ground, and after the cylinder was there and had reached water another and smaller pipe was put down in that cylinder and to that smaller pipe a pump was attached and the water was drawn. That is not a Driven Well; and when we come to examine the testimony of Purdy himself he describes it as an artesian well, and he says in express terms that it was not a Driven Well, and, when asked as to whether it had the characteristics which we know to belong to a Driven Well, he said "No," and asserted in definite terms that it was a well in which there was a lining of three or four inches in diameter, with a cylinder one and one-half inches, with a pump attached, placed inside the lining, taking it entirely out of the category of Driven Wells.

With regard to the Naperville Well, that was in the Carman case, the first case that was decided on this subject; it was merely, as has been described, the puncture of a hole in the ground in a place where the water would flow through that puncture to the surface of the earth.

Now, I want to occupy the remainder of my time with reference to the question as to the knowledge of Green of the use of wells for more than two years before his applica-

tion for a patent. I assume that the question of whether the circumstances of delay amounted to an abandonment was decided in the case of Beedle *vs.* Bennett. In that case the summary of the facts which was made up from all these proofs, which have been so much dwelt upon by counsel on the other side, is this: "That he, at the time of his alleged invention, claimed to have made a valuable discovery and to have invented a new process;" "that he then declared an intention to secure his process by letters patent and expressed his belief that large profits would accrue therefrom; that he, at that time, having been partly educated at West Point, was engaged in organizing a regiment at Cortland, N. Y., his residence, and was expecting soon to take part in the War of the Rebellion; that in June, 1861, he put down a well at his house in Cortland, and in October, 1861, he publicly drove a well, in the manner described in his original patent, at the fair grounds near Cortland for the use of the soldiers in camp, and demonstrated to his own complete satisfaction its success; that he gave orders and directions for the construction of proper apparatus for driving such well, and made arrangements for its transportation with his regiment as it was moved to the seat of war."

And then there is a long statement declaring the many circumstances of difficulty and trouble that involved him for the next three or four years, which I need not read, and the decision of the court on all these facts in this compact form is this: "The circumstances of delay which intervened between that date and the time when he made his application for his patent, in November, 1865, are stated in the agreed statement of facts. These circumstances sufficiently rebut any presumptions which otherwise might have arisen of an intention on his part to abandon and dedicate to the use of the public the invention described in his patent.

And the court then cites Andrews *vs.* Carman with approval, the last sentence of which decision is this: "Under such circumstances it would be going far to say that his act

of permitting the use of his process at the camp in Cortland, where his regiment was there in camp, and of providing material wherewith to provide such wells for his regiment when it should move into hostile territory, amounted to a dedication of his invention to public use and worked a forfeiture of his right to it."

I therefore consider that matter settled; but there is another matter, whether he consented to and allowed, as the inventor and discoverer of the improvement, the public use of his invention for more than two years from the date of his patent. If he did that, that would be a much more serious matter. Your honors know that in 1836 the law was that if a man allowed and consented to the use of his patent, as inventor and discoverer, for any time, no matter how short, before his application for a patent, it was fatal. Three years after that, however, in 1839, in an act which is entitled "An act in addition to the act to promote the progress of useful science," &c., an act which made a number of small additions to and amendments of the law of 1836, it was provided that no such use or purchase should be fatal to the patent unless it was for more than two years, and the circuit courts have uniformly, in the cases which we have cited in our brief, held that under the act of 1839 such use must be with the consent and allowance of the inventor and discoverer, and it was not until 1870 that the law become what it is now, in the general remodeling of the patent law which took place then, that a man must prevent the use of his patent for more than two years or fail to get a patent, or have his patent invalidated. This patent is under the law of 1839. We have shown in the brief the grounds on which we claim that in order to invalidate this patent it must be proved that the inventor consented to and allowed the use of his invention for more than two years. It is said in this case that this inventor did so, and, if he did, it is a fatal fact. If he did not, then his patent cannot be forfeited or disturbed.

Is that fact proved? Did he consent to and allow, *as inventor,* the use of his patent for more than two years prior to the application for a patent? I insist that mere knowledge of the use of an invention is not to be considered as the consent and allowance referred to in the statute. The statute says "*consent and allowance as inventor and discoverer,*" and I insist that it means that he should actively, by his own will, and generally for his own purpose, pecuniary or otherwise, actually consent to and allow—voluntarily, knowingly, allow and consent to the use of his invention *as the inventor and discoverer of it,* and not merely know that other parties are infringing; but, without reference to that distinction, I insist that there is no proof in this case that Colonel Green had any such knowledge or gave any such consent or suffered any man, with his own knowledge, to make a Driven Well for more than two years prior to his application for a patent. And I insist that it is proven in this case that in spite of all his discouragements and difficulties, in spite of his being subjected to vexations that amounted to four years of torture, when he first learned and was told by Mr. Todd that somebody was using his invention in 1865, he insisted upon having a patent applied for without any possible delay, and when his attorney, who was just then taking care of his safety in the indictment which was pending and which was not tried until 1866, cautioned him against applying for a patent at that time before his indictment was tried, because of the injury it might work on his personal fortunes in that desperate strait, he nevertheless insisted that he would reply. He was conscious that it was necessary for him when he did once find out that people were using his invention without his consent to hasten his application for a patent; and so, in spite of his counsel, from his own conception of the necessity of the case, when he learned the fact that men were violating his rights as an inventor, he took measures for an application in the latter part of 1865 and early in 1866 made formal application more than once,

for one was mislaid and he was obliged to make another. He denies in the most positive terms that he had any knowledge whatever of the use of any of these wells apart from the experiments which he made in the latter part of 1861 or authorized Mudge to make, which this Court has determined were not to be regarded as abandonments of his invention. He denies it in general and he takes up each of the witnesses in detail and denies specifically what they say. He knows whether he knew or not. But they say on the other side, "How was it possible for him to not know?" He lived in Cortland and certain wells were put down in Cortland, in several houses in that village. "How was it possible that he should not know that wells were put down during those two years?" I answer that with one simple and sufficient answer. One of the witnesses, the chief witness brought to fasten actual knowledge upon him by conversation, is Dr. Bolles, whose testimony I shall allude to by-and-by. Dr. Bolles in his testimony says that he put down a well in his house in 1863, and up to that time he had never known of a Driven Well being put down, and in the opinion in Andrews *vs.* Carman, Judge Benedict alludes to the fact that Hunter, a justice of the peace, a man who knew perhaps as much about the town as any other man, also asserted his want of knowledge of any Driven Well being driven in that town down to 1865; but they say there is proof in this cause that he did know. I want to call the attention of the Court carefully to that proof. It is alleged in Mr. Lake's brief, page 101: "Take the testimony of H. W. Woodruff, Henry Bates, and Dr. H. A. Bolles, and Green is proven to have had full knowledge of the use of these wells and of their manufacture by Mudge as early as April, 1863;" and he adds that to each of them Green expressed the utmost confidence in the wells and their success.

I complain of the manner in which the learned counsel has stated in this brief the result and substance of the testimony of these witnesses. Over and over again, when I ex-

amined the statements of the brief on the other side, without having known anything about the testimony when it was taken, I have been startled by the positive assertion of facts alleged to be proved, and when I come to examine the testimony I have found there was no such proof. I found that the statements were entirely erroneous as to the effect and meaning of the testimony. All through his brief it will be found that when he undertakes to state the substance and result of a witness' testimony he overstates it, and, I am sorry to say, often misstates it in a very improper manner. It is very important for counsel in this cause, where we have a case involving two big volumes, a vast mass of testimony, with which counsel are supposed to be familiar and which they have taken, to state its results with scrupulous accuracy.

It is obligatory upon counsel, when they undertake to lay before the Court in their brief an abstract of the testimony and to tell them really what it means, that they should do it with the utmost fairness. I say that has not been done in this case, and it will be demonstrated by the statements which I now make as to the testimony on this important question of knowledge. If it is proved, as counsel states it to have been proved in this case, that by the testimony of Woodruff and Bates and Bolles Green is shown to have had full knowledge of the use of these wells and their manufacture by Mudge, and that he expressed to each of them the utmost confidence in the wells and their success—if that is true, then it is fatal to the patent; but let us see how far from true it is. He goes into details, and he states in his brief: "Mr. Woodruff conversed with Col. Green about this well"—a well made for Woodruff by Mudge in 1862—"and Green claimed that he first suggested that way of making a well to Mudge. When the witness expressed doubt as to the result of the well or its permanency Green *always told him that Mudge would finally succeed*, and would make a nice well, as the well on the fair grounds worked nicely."

There he speaks as if it were a matter of daily or frequent conversation between these parties. "Green always told him that Mudge would finally succeed." Now, this is Woodruff's testimony after speaking of an unsuccessful attempt by Mudge in 1861. Being asked a leading question as to that conversation with Green about the well in 1862, he said: "I do not think there was anything said about his former attempts that I recollect of. He said, I was the first suggester," in speaking of the well—the Driven Well. "I cannot tell you; I do not know that I have any further answer to make." And, being pressed with the question: "Was it at any of these conversations in 1862 talked over between you and Green as to how Mudge made this well?" he said, "*I do not recollect anything of the kind.*" And yet counsel says that many times Green always told him it would be a success.

Counsel says in his brief as to Bates' testimony, page 90: "Green talked with him about the well and told him that it would be a good one. Bates told Green that Byron Mudge made the well and how he made it." I say there is no such proof in this cause. I say that it is a misstatement of the evidence of Bates. He adds: "Green was there during the time the house was being built several times, and talked about the well at different times. Bates told Green that it was a Driven Well, and that Mudge drove it." I say that is not proved. This is Bates' testimony. After saying that he had a well put in his house—I quote, I do not give the substance of the testimony; I give question and answer in order that the Court may see just what the man meant to say and what was the proof. That is not done by the counsel on the other side in his brief:

Q. 28. How many times was Colonel Nelson W. Green there—state briefly—at Bates' house, where the Driven Well was?

A. I could not say how many times.

Q. 30. Do you know whether or not said Nelson W. Green saw this Driven Well?

A. I do.

Q. 31. Why?

A. Because we used it and talked about it.

Q. 33. Did said Nelson W. Green pump water from it?

A. He did.

Q. 34. State what was said between you and said Green.

A. I cannot remember all that was said.

Q. 35. State what you remember was said.

A. Well, in looking over the house we came to the well and cistern pump, which came up in a sink—the well pump on one end of the sink, the cistern pump on the other. I showed him my arrangement for getting water there. I told him how I pumped the well water from one side and cistern water from the other side. We pumped water—he did and I did, too. He said that was a good arrangement or a good thing.

This was only as to pumping water on one side of the sink from the well and the other from the cistern; nothing about a Driven Well whatever; only that it was a good arrangement, as they were going through the house examining the different features. He adds:

"He spoke about which was the well and which was the cistern when we first started in; both were clear water; that is all I remember about the well and pump business just now."

And yet counsel says he talked with Green often, and Green *always told him that the well was a success* and who made it.

Q. 36. Did said Green pump water from this Driven Well at that time?

A. He did.

Q. 37. Did said Green know at that time that this was a Driven Well?

(See how he is plying him with leading questions!)

A. We talked about its being a Driven Well.

Q. 38. What did you say about its being a Driven Well?
A. *I don't remember what was said.*

On cross-examination he stated that he said he had a Driven Well, and that "Mudge drove it down; don't remember his exact reply," but his first statement, given on the direct examination, was merely a statement that Green came to his house one day and went over it to see the different features of the house, and came to the cistern and saw a well, and they explained how water was pumped from the cistern in one end and the well in the other, and when asked and pressed to say he knew and told him it was a Drive Well, he did not remember what was said.

But Bolles' testimony is still more important. Mr. Lake states Bolles' testimony thus: "Doctor Bolles started out to find Mudge to have him make the well. Before he found Mudge"—this is the counsel's statement of Bolles' testimony—"Before he found Mudge he met Colonel Green on the street. The Doctor stopped Green and inquired of him about the well on the fair ground and how it worked, and told him that he wanted a well of that kind made. Colonel Green told Doctor Bolles that he did not make that kind of a well, but referred him to Byron Mudge, who, Colonel Green said, would make him a well of that kind."

Very important, very striking a conversation in the street where Colonel Green told him Mudge would make him a well if he wanted, and he did not make them himself, but referred him to a man who did. Now, see what Bolles' testimony really is. After saying that he wanted a well and tried to find Mudge, he says:

"I found him after a little while, *but think I saw Green somewhere before I found him. I don't remember much about the conversation with Green, but found Mudge soon.* He came with help and put down the well right along, and we had water within two or three hours. I was not there all of the time they were putting it down. I remember going away part of the time; think I was called.

"Q. 9. State the substance of the conversation which you had with Green, as near as you can recollect it.

"A. *I can't recollect. My impression is that he referred me to Mudge.*

"Q. 10. Referred you to Mudge for what?

"A. As a man that would put the well down.

"Q. 11. State, as near as you can now recollect, where it was that you saw Green on this occasion.

"A. My impression is that it was between the creek and the carding mill and his house.

"Q. 12. State, as near as you can, the substance of the remarks which you addressed to Green.

"A. *I could not give the conversation. My impression would be that I asked him about such a well and he referred me to Mudge.*

"Q. 13. Did you then state to Green, in substance, the necessity of having a well made quickly for you?

"A. *I don't recollect.*"

And on one cross-examination he said, being asked:

"Q. You will not swear positively that you saw Green just before the well was put down, will you?

"A. *I cannot; still, my impression is that I did.*

"Q. Do you know of your own knowledge whether Colonel Green ever saw the well at your house or not?

"A. *I do not.*"

That is the whole testimony of knowledge on the part of Green which is contained in this case, and I submit that it does not prove any such thing. The evidence is not directed to bringing to Green's knowledge the fact of any well having been driven in Cortland during that time, and Green distinctly denies all these conversations and insists that he did not know there was a well driven anywhere until Todd told him, when he immediately applied for a patent.

How much time have I remaining?

THE CHIEF JUSTICE. Five minutes longor.

Mr. KEASBEY. It is not worth while for me to enter on any new discussion. I repeat that it seems to me the only

thing left in this case is the matter of the four alleged wells and the question of Green's knowledge, or rather his consent and allowance to the putting down of wells in Cortland for more than two years previous to the application for his patent. As to the construction of the patent, the abandonment, the utility of the invention, everything which can be decided by the Court, has already been determined in the cases which have been brought before it heretofore, and the alleged anticipations are merely bringing up anew the same anticipations that have been in many of the other cases heretofore tried at the circuit. One thing I think has been mentioned already by my colleague, that the answer in Beedle *vs.* Bennett contains four hundred and eighty or two hundred and twenty alleged anticipations of this patent, and in other cases numerous allegations of the same kind are made; and yet these four wells are brought here, discussed, and determined by the courts in so many cases and generally upon the same testimony and are insisted upon as anticipations of this patent, invalidating it after all this litigation. It is now nearly twenty years since the litigation began; the patent has had favorable judgments from so many courts and from this Court in two cases; and it seems impossible to believe that this case will not now impress the final seal of the approbation of the Court upon this great invention of Colonel Green, which has proved so useful to the world.

ANTHONY Q. KEASBEY,
Of Counsel with Appellants.

123-267

123-267

Supreme Court,

OF THE UNITED STATES,

OCTOBER TERM, 1886.

ANDREWS *et al.* v. HOVEY.	*No. 196.*
ANDREWS *et al.* v. CONE.	*No. 440.*

Motion to pass Case No. 196, and to hear it and No. 440, at the next Term, at some day certain; and to apply the Rule promulgated March 28th, 1887, to both of said Causes.

And now come the appellants in both of above causes, and, upon the facts stated in the affidavit and papers hereto annexed, move this Honorable Court:

I.—That said cause No. 196 be passed for this Term; and that said two causes No. 196 and No. 440 be heard together, at some day certain, at the next Term.

II.—That Sec. 9 of Rule 10, promulgated 28th March, 1887, be applied to these two causes; and that an order be made permitting the parties to act under said rule in said causes.

III.—For such other order as may be proper herein.

April 4th, 1887.

J. C. CLAYTON,
Of Counsel with Appellants,
in both of said Causes.

U. S. SUPREME COURT—OCTOBER TERM, 1886.

ANDREWS *et al.* *v.* HOVEY.	*No. 196.*
ANDREWS *et al.* *v.* CONE.	*No. 440.*

CITY AND COUNTY OF NEW YORK, State of New York, } ss.:

WILLIAM D. ANDREWS, of the city, county and State of New York, being duly sworn, deposes and says, that he is one of the appellants in the above entitled causes.

That the said causes were joined and tried as one cause in the Court below, upon testimony taken partly in each of the causes but not entirely duplicated in either. These causes were heard together before Judges Shiras, Love and Nelson upon testimony taken separately in the causes; much of it was given by the same witnesses; and defendants' witnesses at times materially varied their statements, which variations appellants cannot properly use in this Court, unless the two causes be heard together, as they were at Circuit.

A portion of the testimony, in each case, is by different parties upon different subject matter; much of which is important, and can only be included by a joint hearing of the two causes.

That all the testimony in the said two causes was used at the hearing indiscriminately, and one formal decision only was made, and that in the

Hovey case. Judges Shiras and Love decided in favor of defendants and Judge Nelson in favor of complainants.

Deponent further says that the said Hovey cause is upon the U. S. Supreme Court calendar, October term, 1886, as Andrews *et al.*, appellants, *v.* George Hovey, No. 196; and the cause of Andrews *et al. v.* Royal D. Cone is upon the same calendar as No. 440; that only a part of the testimony in the record of No. 440 is in the record of No. 196.

Deponent further says that Lake and Harmon, D. B. Henderson and Thomas Wilson, solicitors, and counsel for respondents in No. 456 (now No. 196) and No. 761 (now No. 440), October term, 1885, and C. R. Ingersoll, solicitor for Appellee, in No. 377 (now No. 120), same term, and Jed Lake, as counsel in said causes, prepared and signed a petition to this Honorable Court, asking the above mentioned causes to be heard together.

In that petition it is averred that "IT IS CERTAINLY RIGHT THAT INASMUCH AS No. 456 (NOW 196) AND 761 (NOW 440) WERE HEARD TOGETHER AT THE CIRCUIT COURT, AND AS THE EVIDENCE IN THE TWO CASES IS LARGELY THE SAME, THAT THEY SHOULD BE PRESENTED AT THE SAME TIME TO THIS COURT."

A printed copy of notice served upon counsel for appellants, with autograph letter of Lake and Harmon, which accompanied the notice attached thereto, is herewith filed. Copies of the motions are hereto annexed.

Deponent further says, that the testimony in the cause of Andrews *et al v.* Eames, No. 120, is entirely distinct from the testimony in the other causes and complete in itself; that complainants offered to stipulate into that case any evidence from any of the other Driven Well cases then pending, thus saving expense and time of taking the testimony, which offer was declined; and counsel for defendants was satisfied to proceed to a trial with the evidence as it was submitted.

And this deponent further says, that the hearing

below of said two causes was had upon printed abstracts of the testimony; and that in point of fact a very large part of the testimony actually taken was not used at said hearing. And he is advised, and verily believes, that if Sec. 9 of Rule 10, promulgated March 28, 1887, be made to apply to these causes, much expense to the parties and labor for the Court would be saved.

Deponent further says that in the cause of Andrews *et al v.* Eames, defendant sets up in his answer a list of 28 patents alleged to anticipate the patent in suit, also 53 prior publications, and 222 persons are named who are alleged to have had prior knowledge. These comprised all the defenses that had previously been set up in the numerous suits, including those in the Iowa and Minnesota causes, but no one of all the 222 witnesses were examined.

That in the said cause, No. 196, the clerk has formally called upon appellants to pay $5,700 to print the record; ~~and for the sum of $ ——~~ to print the record in No. 440 will cost more,

And that deponent is not aware of any reason why all the material proofs and pleadings in both of said causes should not be printed together.

A motion to hear together Nos. 120, 196 and 440, has been previously denied by this Court, at last term.

Deponent further says, that the cause of Eames *v.* Andrews, No. 120, under the same patent involved in cases No. 196, and No. 440, was fully argued orally early last January; that deponent has not yet had printed No. 196, partly for the reasons arising from the facts above stated, and partly because he had reason to expect that cause No. 120 would have been decided before this date; and that such decision would have served as a guide to determine what action to take in causes No. 196 and No. 440.

That in cause No. 120, the holders of the patent in suit prevailed in the Court below, and the burden of proof was upon the defendant and appellant, which is not the case in No. 196 and No. 440.

That, as to said cause No. 120, deponent desires to respectfully ask that said cause be decided at the early convenience of the Court, upon its own merits, and upon the briefs and oral arguments made therein last January, without regard to causes No. 196 and No. 440, which have no connection with it. For which, among other reasons, the joint hearing of the *three* causes was opposed, but Nos. 196 and 440 have important connection, each with the the other, and it is so stated by counsel for appelees in both those causes in their motion made to this Court, during Oct. term, 1886.

WM. D. ANDREWS.

Subscribed and sworn to before me, this second day of April, A. D. 1887.

[L. S.] HENRY BEENY,
Notary Public,
New York County.

No 179.

IN THE SUPREME COURT OF THE UNITED STATES,

OCTOBER TERM, 1884.

WILLIAM D. ANDREWS, GEORGE H. ANDREWS, NELSON W. GREEN and NOAH J. PARSONS *v.* GEORGE HOVEY.	*Appealed from the United States Circuit Court, District of Iowa.*

To the Honorable Judges of the Supreme Court of the United States:

Your petitioners respectfully show, that the above cause has been duly appealed from the United States Circuit Court, District of Iowa, and is now pending in the above Court; that the cause of William D. Andrews *et al. v.* Royal D. Cone has been duly appealed from the United States Circuit Court, District of Minnesota, and is now pending in the above Court; that the cause of B. F. Green *v.* Phineas French, and B. F. Green and various other defendants tried together and lately pending in the United States Circuit Court, District of New Jersey; and W. D. Andrews *et al. v.* Harris Eames, lately pending in the United States Circuit Court, District of Connecticut, have been duly appealed and are now pending in this Court; all brought for infringement of Letters Patent Reissue 4372, and whereas the decision in the two first named causes was in favor of the respondent and against the validity of the patent involved in said cause, and the decision in the other causes named was in favor of complainants, and in favor of the validity of said patent, and whereas the questions involved are of great interest to the public, as well as the parties named, and an

early decision of the questions involved in said causes is desirable, because of the widespread use of the patented process, and the uncertainty that has arisen from conflicting decisions in different districts, therefore your petitioners respectfully pray that you will advance said causes on the Docket, and that the same, or so many of them as the parties thereto may unite in signing this petition, be heard together at the present term of this Court, and that you hear the Iowa cases and Minnesota cases on the testimony taken in those cases, and either or all of the other cases that may be ready, at as early a day as the business of the Court will permit. And your petitioners would further pray, that in case these cases cannot be tried at the present term of this Court, that you order that the causes be tried together as soon as the first cause is reached for trial; and that time be given to hear the whole causes at the same time. And your petitioners will, as in duty bound, ever pray.

LAKE & HARMON,
Solicitors for Respondent, GEO. HOVEY.

JED LAKE. M. W. HARMON.

FROM THE

Law and Collection Office

OF

LAKE & HARMON,

INDEPENDENCE, Iowa, April 6th, 1886.

J. C. CLAYTON, 800 Broadway, Newark, N. J.

Dear Sir: We herewith enclose you notice that on April 29th, 1886, we will present a motion in United States Supreme Court to have the case of Eames *v.* Andrews and Andrews *v.* Hovey & Cone, Nos. 377, 451 and 761, heard together during the term commencing in October, '86. Please accept service and return. Motion enclosed is a printed copy of the motion.

Yours truly,

LAKE & HARMON.

IN THE SUPREME COURT OF THE UNITED STATES.—Nos. 377, 456 and 761.

October Term, 1885.

William D. Andrews, Geo. H. Andrews *et al.* *v.* George Hovey.	*No. 456.*
William D. Andrews, Geo. H. Andrews, *et al.* *v.* Royal D. Cone.	*No. 761.*
Horace Eames *v.* William D. Andrews, Geo. H. Andrews *et al.*	*No. 377.*

Motion to Have the Three Cases Heard Together.

Appealed from the Circuit Courts of the United States; District of Iowa, District of Minnesota and District of Connecticut.

Lake & Harmon, D. B. Henderson, Thomas Wilson, Solicitors for Respondents in Nos. 456 and 761.

J. J. Ingersoll, Solicitors for Appellant in No. 377.

A. R. West and J. C. Clayton, Solicitors for Appellants in Nos. 456 and 761, and for Appellees in No. 377.

The Driven Well Cases.

To the Honorable the Judges of the Supreme Court of the United States:

There are now pending in this Court the three cases, Horace Eames *v.* Andrews *et al.*, No.377; Andrews *et al. v.* Geo. Hovey, No. 456; and Andrews *et al. v.* Royal D. Cone, No. 761, which are known as the DRIVEN WELL CASES.

In these cases the question is as to the validity of Reissued Patent, No. 4372, of the original patent, No. 73,425, issued to Nelson Green.

In the trial of cases Nos. 456 and 761 in the Circuit Court, while the evidence was taken separately, the cases were argued and decided together. The same issues are presented by the pleadings in each case.

The solicitors and counsel for the defendants in 456 and 761, and for the appellant in 377, unite in asking this Court to order that all these cases be presented and argued to the Court at the same time.

The same questions are involved, and it will be a manifest saving of time to the Court, and of time and labor to the solicitors if the cases are so heard. As the question involved is the validity of the Reissued Patent, No. 4372, it appears to us that no injustice or hardship will occur to either party to have the whole issue presented at the same time.

It certainly is right that inasmuch as Nos. 456 and 761 were heard together at the Circuit Court, and as the evidence in those two cases is largely the same, that they should be presented at the same time to this Court. And we can see no reason why No. 377 should not be heard at the time the other two are heard. As a further reason we would state that there are now pending in the Circuit Court for Iowa about two hundred other cases waiting for the determination of these cases, and about the same number in Minnesota; also that in the United States Circuit Courts of other States

there are a large number of cases pending waiting the result of the decision of this Court in these cases.

From the present state of the docket it is probable that cases 377 and 456 will be reached during the term commencing in October, 1886. It would be no hardship to the parties to postpone 377 until 456 was reached in its order. It certainly would be justice to advance 761 to be heard at that time.

For the reasons above stated we respectfully ask this Court to order these cases heard at the same time. And that the clerk be directed to have the record printed early so that abstracts and arguments can be prepared and printed in time to fully present the issues and the facts.

The respondents in the Circuit Court ask this order as a matter of justice to them and economy in the time of the Court.

LAKE & HARMON,
D. B. HENDERSON,
THOMAS WILSON,
Solicitors and Counsel for Respondents in Nos. 456 and 761.
J. J. INGERSOLL,
Solicitor for Appellant in No. 377.
JED LAKE,
Counsel in all the cases.

The above motion was resisted by Senator Edmunds and denied.

C. J. C.C.

NOTE.—In the original petition the name of C. R. Ingersoll was erroneously printed as J. J. Ingersoll.

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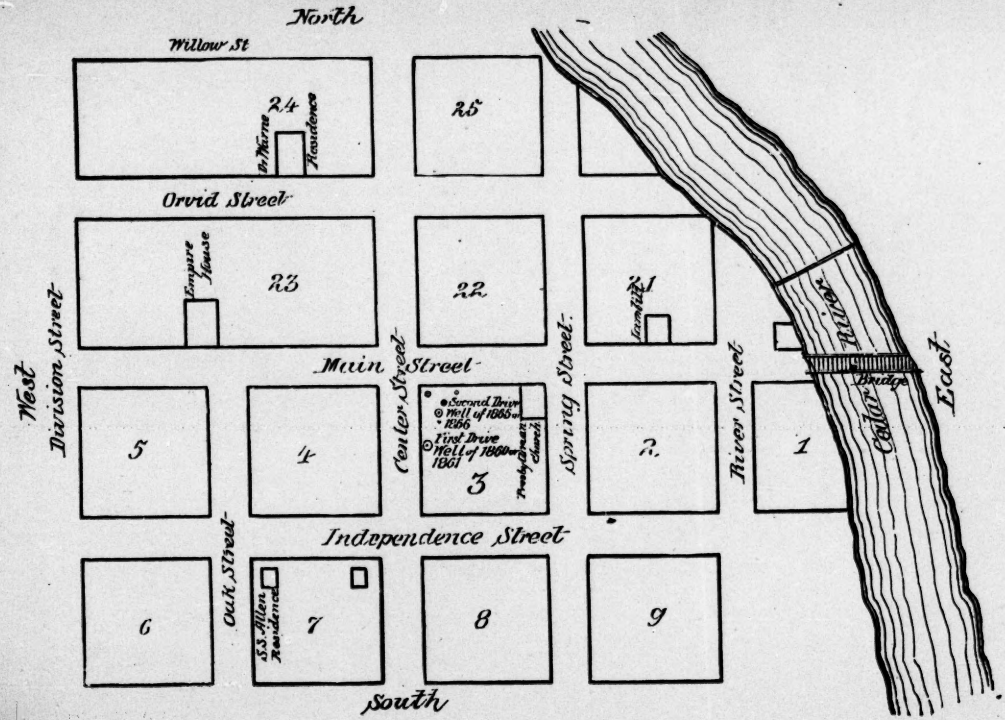
North
Willow St
24
Dr. Kerns Residence
25
Orvid Street
Empire House
23
22
21
Fire Hall
West
Division Street
Main Street
Center Street
Spring Street
River Street
Cedar River
Bridge
East
Second Drive Well of 1885 w 1356
First Drive Well of 1869 w 1361
Trinity Church
3
5
4
2
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Independence Street
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123-264

United States Supreme Court,

OCTOBER TERM, 1887.

WILLIAM D. ANDREWS,
GEORGE H. ANDREWS,
NELSON W. GREEN et. al.
Complainants.

—VS.—

GEORGE HOVEY,
Respondent.

IN EQUITY, No. 16.

The Driven Well Case.

Brief and Argument of Respondent.

JED LAKE,
M. W. HARMON,
Solicitors for Respondent.

JED LAKE, *Counsel.*

UNITED STATES OF AMERICA.

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JED LAKE, Counsel.

THE ANSWER

in these cases, leaving out the formal parts and the names of the witnesses who we expected to use and the publications that we did not use, is as follows:

The defendant now and at all times hereafter, reserving to himself all benefit and advantage of exceptions which can or may be taken to the many errors, uncertainties and imperfections in the said complainants' bill of complaint contained, for answer thereto, or unto so much and such parts thereof as

he is advised are material for him to answer with. He denies that said Green was the original or first inventor of any new or useful improvement in wells, whether as set forth in any letter patent or otherwise; but he avers that identically and in substance the same pretended improvement, as hereinafter more expressly stated, has been known and used by many persons other than said Green, long before the date of his pretended invention, and was by them known and used, and was on sale and was in public use more than two years before the time of his pretended application for letters patent.

* * * *

And the said defendant, further answering, denies that he ever at any place, whether as alleged in the said bill of complaint or otherwise, in violation of any right of the complainants, or infringement of any letters patent, wrongfully or unlawfully, or in defiance of the rights of any person, constructed or used any wells, or threatens to construct or use any wells, or that he has ever done or intends to do any act whatever, in violation of any right of the complainants; or that he has ever caused them any loss or injury, or deprived them of any gains or profits; or that any act that he has ever done or threatened, has had any effect to encourage or induce any person to infringe on said pretended patent, or upon any rights of the said complainants, or that he has ever been notified of any infringment.

And he denies severally and specifically each and every averment contained in the said bill of complaint, save as in this answer admitted, qualified, explained, or otherwise denied.

And the defendant, further answering, denies that the said Nelson W. Green was the first original inventor of the pretended invention in said bill of complaint described, or any or either of them, or of any substantial, material or meritorious component thereof, but on the contrary, he avers and says that the alleged invention and all substantial, material, and meritorious components thereof, were long prior to any alleged invention theref, by said Green, described in certain

letters patent and in certain applications for letters patent, and in certain books, pamphlets and publications hereinafter particularly described. and were known and used by divers persons in this country and elsewhere.

* * * *

Also that the pretended invention, process, device and apparatus, and each thereof, substantially the same in construction and operation as that asserted in said bill of complaint to be included in, covered, and protected by said letters patent to said Green, were made and were in public use for more than two years prior to any application by said Green, for said original letters patent, and more than two years prior to the date of said pretended invention.

* * * *

That the knowledge of each of the aforesaid persons was of the pretended invention, process, device and apparatus, and of each thereof, and of the actual use of the same at the times and places stated, more than two years prior to the time when said Green made his first application for said patent.

This defendant, further answering, states that said invention was known and used in all its parts as described in said complainants' bill of complaint, and his letters patent long before the pretended invention claimed to have been made by Nelson W. Green, and was known to and used by the following named persons, now residing in Buchanan county, Iowa, in said county, in the spring of 1861:

* * * *

This defendant states further that in the month of April or May, 1861 there was put in at Independence, Iowa, a well made by driving down into the earth an iron tube, shod with an iron or steel point, with perforations in the tube above the point, without a screen over the same, and sections of tubing attached as driven down, until it projected some feet into the water. And to the top of this tube was attached an iron pump. And the same was used for pumping water through, and was known and publicly used at such place from April or May, 1861, until sometime in July or August, 1861.

And the defendant avers that the alleged invention and all the substantial, material and meritorious components thereof were more than two years before said Green made any application for a patent, and a long time before his alleged inventions, described in certain printed books, pamphlets and publications as follows, to-wit:

In a certain book or publication known as "McKenzie's Five Thousand Receipts," published by James King Jr. & Brother, at Philadelphia, A. D., 1829, being a republication from a London edition, of the same work; on page 388 of which all the material parts of said pretended invention are described.

In a certain book known as, and called "Ure's Dictionary of Arts and Manufactures," published more than twenty years ago, but in what year defendant cannot now state; on pages 65, 66, and 67 of which all the material parts of said pretended invention are described.

In volume 35 of a certain work known as "Rees' Cyclopedia," published in Philadelphia, about A. D., 1817, under the title: "Spring Draining Pump."

Also in volume 5 of said work, under the title, "Borer in Rural Economy," in each of which volumes all of the material parts of said pretended invention are described.

Also as shown in plates; Volume 1, Plate 37 of said Rees' Cyclopedia, under the head of "Agriculture."

Said work, known as Rees' Clyclopedia, is not paged, but the subjects are arranged in alphabetical order, and the above subjects are described under the several heads and plates as stated.

Also a certain book known as Mackenzie's 5,000 Receipts, published in Philadelphia about the year 1829, by one J. J. Woodward, on page 500, under the head and title of "To Raise Water in all Situations,"

Also in a certain book known as Livingston's South Africa, being an account of the missionary travels and researches in South Africa by David Livingston, published by Harper Brothers in 1859, on page 59 of said book.

Also in certain letters patent of the United States issued to Levi Disbro, Nov. 1st, 1830.

Also that said claimed invention was known in all its various parts and the principles involved in said invention were used by and known to the following persons residing at Preble, in the county of Cortland and State of New York.

* * * *

This defendant further answering states that said invention after it was claimed to have been made in 1861, by the said Nelson W. Green, at Cortland, in the State of New York, was by him made and put into use under his order and direction, in the said county of Cortland, and was allowed to go into public use with his knowledge and consent and was allowed to remain in such use from October 1861 until in March 1866, when he made his first application for a patent.

This defendant further states, that after the time that the said Nelson W. Green claims to have invented said well or process the same was abandoned by the said Green to the public, and was used by the public for more than two years before the patent was applied for.

This defendant further answering as to the well he has and uses, and the only well that this defendant ever possessed, owned, used, or in any manner controlled, states that his well was not made in the manner and form like the said wells claimed by said complainants in any particular.

And the defendant denies that the said pretended invention in said bill of complaint described, or any material part thereof, was not known or used, or had not been on sale, or in public use, for more than two years prior to the date of said pretended letters patent, or to the date of the application therefor, and the knowledge and consent of the said Green; but he avers that, if it shall be held that said Green was the first or original inventor of said invention, or any substantial or material part thereof, that after his said invention, and before he ever took any measures to obtain a patent, and prior to the date of said patent, and for a date of more than five years before date of his pretended application for a

patent, said invention, as claimed in said bill of complaint, and in said pretended letters patent, and the substantial and material parts thereof, were in common, public use, and were on sale with the knowledge and consent of the said Nelson W. Green, and that he, with full knowledge of said public use and sale, abandoned the said pretended invention, if any he had, and dedicated the same to the use of the public.

And the defendant avers that any letters patent which may have been issued to said Green in the premises were obtained by fraud and deceit, and that all and singular the several allegations in the application, specifications, claims of or pertaining to said original, and to the surrendered and re-issued letters patent, were wholly false, fraudulent, and untrue, as the said Green has always well known.

And denies that the several owners in said original letters patent joined in the surrender of said letters patent, or in the application for a re-issue of the same; and likewise, on information and belief, denies that said original letters patent were ever surrendered to the said Commissioner of Patents, as claimed in said bill, for good and lawful cause; but on the contrary the defendant on information and belief alleges that said re-issued patent on which this complaint is brought was obtained by fraud and for the fraudulent purpose of enabling the said N. W. Green, complainant, and the other owners of said letters patent, to include in said re-issued letters patent more and other matters and things than those of which he was or claimed to be the first or original inventor, and more than he or the said complainants were entitled to include in his said original letters patent, and things and inventions of which he, the said N. W. Green, was not at the time of his said original patent, or his said application therefor the first and original inventor, and that said re-issued letters patent on which this suit is brought does include, describe and contain, and claims to have patented therein inventions and things of which the said complainant, the said Nelson W. Green, was not the first and original inventor, and further,

that upon the face of said letters patent, the invention therein patented appears to be different from the invention patented and claimed in said original letters patent, and that the same are therefore void and of no effect.

And the defendant therefore says, on information and belief that said re-issued letters patent, on which this suit is brought, were obtained by the said Nelson W. Green by false and fraudulent representations and suggestions to the Commissioner of Patents, and that said patent is therefore void.

This defendant, further answering, says that the well as invented and patented by the said Nelson W. Green, and as described by him in his said letters patent and the specification thereto annexed and also to the re-issue of the same, will not work and make a well in the soil as it is in Iowa. That in no part of the premises occupied by him, as this defendant is informed and believes, would such a well be of any use or benefit to this defendant. This defendant says that by reason of the imperfections in the construction of said wells and the manner in which the said Green describes them, they will not succeed as wells in the soil of Iowa, but are wholly and totally a failure, by reason of the accumulation of fine particles of matter in the tube.

This defendant further avers on information and belief, that some time in the years 1871 and 1872, Elias S. Hovey and Elijah A. Hovey did discover and invent a method or process, by which wells could be made in the soil of Iowa.

That sometime in 1872, the said Elias S. Hovey procured from the Commissioner of Patents at the office of said Commissioner at Washington, in the District of Columbia, letters patent bearing date on the 20th day of February, 1872, and numbered 123,903, and that said process is entirely independent from and different than the process pretended to have been invented by said Nelson W. Green, and is not any infringement on the rights or claims of the complainants herein, which letters patent, or a duly certified copy thereof, this defendant is ready to exhibit to the court, and to present the

same for inspection at such time or times as may by the Honorable the Judges of this court be required. And this defendant further avers and states to this court that by means of the removal of the earth upwards out of the well pit as described in said letters patent, issued to the said Elias S. Hovey, No. 123,903, as stated in said letters patent, and the specifications accompanying the same, the said process invented by the said Hovey, will and does make a good and useful well in the soil as it is in the State of Iowa, and especially in the land occupied by this defendant, whereas a well made as stated and described in the process as claimed to have been invented by the said Nelson W. Green, and as set out in his letters patent re-issue No. 4,372, and the specifications accompanying the same, a well could not be successfully made in the soil of the premises occupied by this defendant. This defendant is the owner of the Elias S. Hovey patent for the State of Iowa as above set forth.

That the wells made by this defendant after January, 1871, were made by cleaning out the well pit in substantial compliance with the method patented to Elias S. Hovey.

And this defendant denies all and all manner of unlawful combinations and confederacy, wherewith he is by the said bill charged; without this, that if there is any other matter, cause or thing in the said complainant's said bill of complaint contained, material or necessary for this defendant to make answer unto, and not herein and hereby well and sufficiently answered, confessed, traversed and avoided and denied, is not true to the knowledge and belief of this defendant, all which matters and things this defendant is ready and willing to aver maintain and prove, as this Honorable Court shall direct, and prays to be hence dismissed with his reasonable costs and charges in his behalf most wrongfully sustained,

LAKE & HARMON,

Solicitors and of Counsel for Defendant.

This answer is duly verified.

OPENING ARGUMENT BY RESPONDENT'S SOLICITORS.

In presenting these cases to the court for its consideration, the Respondent desires to call the attention of the court in the first instance, to the claim and specifications in the original patent No 73,425, dated January 14th, 1868, and then to the claim and specifications in the re-issue No. 4,372, dated May 9th, 1871.

As we understand the current decissions under section 4,916, revised statutes, in case the claim and specifications are complete in themselves, and are so plain that one skilled in the art to which they apply, can, from an examination of the specifications and drawings, make a machine, or put in successful operation the process, there is no law that authorizes the reissue, unless the patentee has claimed more than he is entitled to claim as his own invention.

In other words the reissue is authorized only "when the patent is invalid or inoperative by reason of a defective or insufficient specification, or when the patentee has claimed as his own invention or discovery more than he had a right to claim as new."

As we understand the law and the recent decisions, one of the above must be the case in order to authorize the commissioner of patents to grant a reissue. And further, the defect must have occurred through inadvertance, accident or mistake, and without any fraudulent intention on the part of the patentee.

In view of these provisions of the law, let us examine the specifications accompanying the original patent, and see if these specifications are inoperative or invalid by reason of a defective description. In the original we find the patentee states his invention as follows:

"Figure one represents a portion of the rodwhich is driven or forced into the ground to form the opening or hole for the insertion of the tube that forms the casing or lining of the well, and the avenue through which the water is raised to or above the surface of the ground; and Figure 2 represents a portion of the tube.

"My invention consists in driving or forcing an iron or wooden rod with a steel or iron point, into the earth, until it is projected to or into the water; and then withdrawing the said rod and inserting in its place a tube of metal or wood to the same depth, through which and from which the water may be drawn by any of the well known forms of pump.

"To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

"The driving rod, *a*, I construct of wood, or iron or other metal, or of parts of each, with a sharp point, *b*, of steel or otherwise, to penetrate the earth, and a slight swell, *a*, a short distance above the point to make the hole slightly larger than the general diameter of the rod. This rod I drive by a falling weight, or other power, into the earth until its point passes sufficiently far into the water to procure the desired supply. I then withdraw the rod and insert in its place the iron or wooden tube, *B*, which may be slightly contracted at its lower end to insure its easy passage to its place. In general this tube, *B*, I make of iron, and of a thickness that will bear a force applied at its upper extremity sufficient to drive or force it to its place; and when a large or continuous flow of water is desired, I perforate this lower end of the tube to admit the water more freely to the inside.

"The perforations, *c*, may be about one-half an inch in diameter, less or more, and from one to one and a half inches apart, and the perforations may extend from the bottom of the tube upward from one to two feet. The diameter of the tube should be somewhat smaller than the diameter of the swell, *a*, on the drill end of the driving rod, *A*. * * *

"The rod may be of any suitable and practical size that can be readily driven or forced into the ground, and may be from one to three inches in diameter.

"Any suitable, well-known pump may be applied to raise the water up through the tube to the surface or above it.

"I am aware of James Suggett's patent of March 29th, 1864, and I disclaim all secured to him therein.

"Having thus fully described my invention, what I claim and desire to secure by letters patent is: The herein described process of sinking wells where no rock is to be penetrated, *viz:* by driving or forcing down a rod to and into the water under ground, and withdrawing it and inserting a tube in its place to draw the water through, substantially as herein described."

It will be seen, when you examine these specifications and claims closely, that there is nothing wanting to make a complete well, according to Green's invention. The rod is described in detail, and is represented in the cuts attached and referred to. It is to be driven into the earth until it is projected to or into the water under the ground, and then withdrawn and the tube is forced down to the same depth as the rod was driven. The tube is shown in the drawing and described in the specifications. It would seem that there could be no cause for a reissue. It is all stated that is necessary to make the well. It is complete and perfect. That the description is all sufficient to enable one skilled in the art to make such wells, we will refer the Court to the testimony of

George Hovey, Intgs No. 47 to 57, both inclusive. R. P. 1626
Elias S. Hovey, " " 29 to 33, " " R. P. 1732
E. A. Hovey, " " 26 to 27, " " R. P. 1753

Each of these witnesses testifies that he has had considerable practice in making what are known as driven wells, or iron tube wells, and on an examination of the specifications as presented to them, state that from an examination of the specifications and drawings in the original patent, they would have no difficulty in making that kind of a well in soil where it could be made, with an open ended tube with such large holes as described in Green's original patent.

Besides, not attempting to disprove that these specifications are complete, the complainants put on the stand one W. O. Barnard, who says that he did make two wells in the way described by N, W. Green, and that they were good and successful wells. See W. O. Barnard's evidence. Direct interrogatory No, 23. R. P. 301

And Testimony of Hiram Crandall Interrogatories 18-27. R. P. 685-687

And this evidence has not in any manner been contradicted by any one. The complainants have not by any evidence or any showing, tried to satisfy the Court that any one skilled in the art of making driven wells could not have made a well by reading the specifications and claim of the original patent without the reissue.

The testimony on that point stands out full. fair and uncontradicted.

Then why was a reissue sought? For what purpose did the patentee surrender the original and get a reissue?

In presenting this point I wish the Court to bear in mind that the evidence of Mr. Green conclusively shows:

1. That his claimed invention was in September or October, 1861. That it was in one of those two months, that he gave the description of the method, and had the experiment made. In the month of November, 1861, he had a well put in for Julius A. Graham, on the Fair Ground at Cortland, N. Y. That such well was a success, and gave an abundance of water during the entire time that the regiment was on the Fair Grounds, which is shown to have been about two months after the well was made.

2. And as a further part of the proof to show that this original patent was not inoperative or inaffective by reason of defects in the specifications, we wish to call the attention of the Court to the fact that this invention is claimed to have been made in 1861. That between that time and the time when a patent was applied for by N. W. Green, which was March, 1866, James Suggett and Byron Mudge had been putting down wells at Cortland, where Green lived, and had applied for and obtained patents, and that when Green made his application, the art of making these wells had been highly developed by others, and Mr. Green knew of that fact, and had an opportunity to profit by their labors. These facts show that his opportunities to make his specifications perfect were good, and that they were, is shown by the evidence that wells could be made and were made with success precisely as he has stated in his specifications.

Then if the original was not inoperative or void, by reason of defective specifications, there was no law authorizing the reissue. If the reissue was not authorized by the terms of the statute, then the Commissioner of Patents exceeded his jurisdiction and the reissue is void for want of authority to issue it.

In the case of the Giant Powder Co. vs. California Vigorit Powder Co., Off. Gazette Vol. 18, p. 1339, Fed. R. Vol. 4, p. 720, the Court said: "A reissue can only be had when the original patent is inoperative or invalid from one of two causes; either by reason of a defective or insufficient specification, or by reason of the patentee claiming as his own invention, or discovery, more than he had a right to claim as new."

In the case of Flower et al. vs. Rayner, Fed. R. Vol. 5, p. 793, the Court said: "A careful reading of the law shows that the Commissioner has power to grant a reissue only in special cases, and under particular circumstances." "The original patent must be inoperative or invalid either for defective or insufficient specifications or from claiming as new, more than the patentee has the right to claim." "And in addition to this, the error which is sought to be corrected, must have arisen by inadvertance, accident or mistake." Thus it will be seen that when the original patent is not inoperative or invalid by reason of a defective or insufficient specification, or by reason of the patentee claiming as his own invention or discovery, more than he had a right to claim, there is no authority in the Commissioner to grant a reissue And if so granted without authority, the Commissioner exceeds his jurisdiction, and his action is illegal, and the reissue so made is void.

Russell vs. Dodge, 3 Otto, 460,
Powder Co. vs. Powder Works, 8 Otto, 138,
Giant Powder Co. vs. California Vigorit Powder Co., Official Gazette, Vol. 18, p. 1339; Fed. Reporter, Vol 4, p. 720,
Oil Cup Co. vs. Harper Steam Lubricator Co.. Fed. R., Vol. 4, p. 328,
Putman vs. Tinkham, Fed. Reporter, 4, p. 441,
Flower vs. Rayner, Fed. Reporter, Vol. 5, p. 793.

We wish now to call the attention of the court to the specifications of the reissue, and the original, which are here

And this evidence has not in any manner been contradicted by any one. The complainants have not by any evidence or any showing, tried to satisfy the Court that any one skilled in the art of making driven wells could not have made a well by reading the specifications and claim of the original patent without the reissue.

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Russell vs. Dodge, 3 Otto, 460,
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Oil Cup Co. vs. Harper Steam Lubricator Co.. Fed. R., Vol. 4, p. 328,
Putman vs. Tinkham, Fed. Reporter, 4, p. 441,
Flower vs. Rayner, Fed. Reporter, Vol. 5, p. 793.

We wish now to call the attention of the court to the specifications of the reissue, and the original, which are here

printed side by side for the purpose of more easily comparing them.

Specification, forming part of Letters Patent No. 73,425, dated January 14, 1868.

To all whom it may concern:

1. Be it known that I, NELSON W. GREEN, of Cortland, in the county of Cortland and State of New York, have invented a new and useful improvement in the manner of sinking and constructing artesian or driven wells, where no rock is to be penetrated, and of raising water therefrom; and I do hereby declare the following to be a full, clear and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which —

2. Figure 1 represents a portion of the rod which is driven or forced into the ground, to form the opening or hole for the insertion of the tube that forms the casing or lining of the well, and the avenue through which the water is raised to or above the surface of the ground: and figure 2 represents a portion of the tube.

3. My invention consists in driving or forcing an iron or wooden rod, with a steel or iron point, into the earth until it is projected to or into the water and then withdrawing the said rod and inserting in its place a tube of metal or wood to the same depth, through which, and from which the water may be drawn by any of the usual well known forms of pumps.

4. To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

5. The driving rod A, I construct of wood, or iron, or other metal, or of parts of each, with a sharp point B, of steel or otherwise, to penetrate the earth and a slight swell, A, a short distance above the point, to make the hole slightly larger than the general diameter of the rod. This rod I drive by a falling weight or other power, into the earth, until its point passes sufficiently far into th water to procure the desired supply. I then withdraw the rod and insert in its place the iron or wooden tube B, which may be slightly contracted at its lower end, to insure its easy passage to

Specification forming part of Letters Patent No. 73,425, dated January 14, 1868; reissue No. 4,372, dated May 4, 1871.

To all whom it may concern:

1. Be it known that I, NELSON W. GREEN, of Amherst, in the county of Hampshire and State of Massachusetts. have invented a new and Improved Method of Constructing Artesian Wells; and I do hereby declare that the following is a full, clear and exact description of the same, reference being had to the accompanying drawing, forming part of this specification.

2. My invention is particularly intended for the construction of artesian wells in places where no rock is to be penetrated.

3. The methods of constructing wells previous to this invention were what have been known as "sinking" and "boring," in both of which the hole or opening constituting the well was produced by taking away a portion of the earth or rock through which it was made.

4. This invention consists in producing the well by driving or forcing down an instrument into the ground until it reaches the water, the hole or opening being thus made by a mere displacement of the earth, which is packed around the instrument, and not removed upward from the hole as it is in boring. The instrument to be employed in producing such a well, which, to distinguish it from "sunk" or "bored" wells, may be termed a "driven well," may be any that is capable of sustaining the blows or pressure necessary to drive it into the earth; but I prefer to employ a pointed rod, which after having been driven or forced down until it reaches the water, I withdraw, and replace by a tube made air-tight through its length, except at or near its lower end, where I make openings or perforations for the admission of water, and through and from which the water may be drawn by any well-known or suitable form of pump.

5. In certain soils the use of a rod preparatory to the insertion of a tube is unnecessary, as the tube itself through

This variation or rather enlargement of the claim was held to invalidate the patent.

In the case of the Giant Powder Co. vs California Vigorit Powder Co., 4 Fed. Rept. 720, the reissue was held invalid, because in the original nitro-glycerine was to be combined with some non-explosive absorbent; and in the reissue nitro-glycerine could be combined with an absorbent, either explosive or non-explosive. This change was held to enlarge the scope of the patent, and therefore the commissioner exceeded his jurisdiction when he granted the reissue.

In the case of Flower, et al, vs Rayner. 5 Fed. Rept. 793, the original was for producing indelible lettering designs upon sheet tin and tinned sheet iron, by heat that would slightly amalgamate the colors printed with the tin. The reissue did not confine the lettering to tin or tinned sheet iron, but extended it to other articles, and also abandoned the process of heating sufficiently to amalgamate the colors with the material on which it was printed.

This was an unauthorized variation and the reissue was held void.

Passing now to the thirteenth paragraph, we find there another claim, which is not in any manner hinted at in the original.

"In some cases the water will flow out from the top of the tube without the aid of a pump. In other cases the aid of a pump to draw the water from the well may be necessary. In the latter case I attach to the tube by an a air-tight connection, any known form of pump." If the Court will examine the original specifications they will find reference to a pump in only two places, to-wit: The last clause of the third paragraph says: "Through which and from which the water may be drawn by any of the usual well known form of pumps."

Then paragraph nine says: "Any suitable, well known pump may be applied to raise the water up through the tube to the surface or above it."

The original specifications make no other allusion to a pump.

open end, and in case a large flow of water is desired, holes are made in the side of the tube, and may be one-half inch in diameter and extend up the tube from one to two feet.

This reissue is granted about ten years after the invention is claimed. In that time a large number of wells are made and according to the testimony, a large number of patents are issued, and very much is learned in regard to making this kind of well. Taking the testimony of complainants' witnesses, Mr. Hazzard, of Herkimer Co., N. Y., Mr. C. Brown, of St. Paul, Minn., J. M. Chandler, Geo. Burr and A. Brown, of Independence, Iowa, J. M. Fargo, of Warsaw, N. Y., a large number wells were made before 1868, by driving a tube into the ground without using the preparatory rod.

If to this you add the testimony of respondent's witnesses, George Warne, S. S. Allen, S. P. McEwen, T. H. Tyson, A. F. Williams, J. E. Trexler, John A Davis, T. J. Lincoln, Elijah A. Hovey, Elias S. Hovey and several others, a large number of that class of wells made by driving the tube into the ground without the use of a preparatory rod, were made, ranging from 1861 to 1871, and in that time that method had become well known and used.

Then take the testimony of A. Butterfield, George Leland and John Highsmith, of Waterloo, Iowa. They saw wells made in that way and made them that way themselves, in and about Blackhawk county, Iowa, commencing with the year 1865 and on to the year 1871, and perhaps later.

Then take complainents' witness Nate Stanton, of Waterloo; he made, as they proved by him, a large number of wells in that way, commencing with 1867 and continuing to about 1873.

In the case of Russell vs Dodge, 3 Otto, 493, the Court held the reissue void, because in the original patent the use of fat liquor in a heated condition in tanning skins, was the gist of the invention. In the reissue the use of the fat liquor heated was left a mere matter of option. But it was claimed that the fat liquor could be used either with or without heating.

13. In some cases the water will flow out from the top of the tube without the aid of a pump. In other cases the aid of a pump to draw the water from the well may be neeessary. In the latter cases I attach to the tube by an air tight connection, any known form of pump.

14. What I claim as my invention, and desire to secure by Letters Patent, is--

15. The process of constructing wells by driving or forcing an instrument into the ground until it is projected into the water, without removing the earth upward as it is in boring, substantially as herein described.

N. W. GREEN.

Witnesses:
SYDNEY E. SMITH,
W. MORRIS SMITH.

We find in the fourth paragraph of said reissue specification, the following statement, no part of which is in the original.

"The hole or opening being thus made by a mere displacement of the earth, which is packed around the instrument, and not removed upward from the hole as it is in boring."

In the fifth paragraph we find an entire new matter stated, one that was not hinted at in the original.

"In certain soils, the use of a rod preparatory to the insertion of the tube is unnecessary, as the tube itself, through which the water is to be drawn, may be the instrument which produces the well by the act of driving it into the ground to the requisite depth."

No intimation of such an act is set out in the original, and the tube shown in the drawings accompanying this patent, is a blunt ended instrument; hollow also, and could not be driven into any compact soil without previously making a hole in the ground, in which to insert it.

We wish to call the attention of the Court to this matter particularly, and also to some evidence on these points.

This method of making a well by driving the tube itself, is a different one than that set out in the original. There the rod is to be driven and then withdrawn, and a tube inserted with

ts place. In general, this tube B. I nake of iron, and of a thickness that will bear a force applied at its upper extremity sufficient to drive or force it to ts place; and where a large or continuous flow of water is desired, I perforate his lower end of the tube, to admit the water more freely to the inside.

6. The perforations C, may be about one-half of an inch in diameter, less or more, and from one to one and a half nch apart, and the perforations may extend from the bottom of the tube upward from one to two feet. The diameter of the tube should be somewhat smaller than the diameter of the swell, A, on the drill end of the driving rod A.

7. In localities where the water is near the surface of the ground, and the well is for temporary use only. as in the case of a moving army, or for temporary camps, lighter and thinner material than iron may be used for making the tubes, as for instance, zinc, tin, copper, or sheet metal of any other kind, or even wood may be used.

8. The rod may be of any suitable and practical size that can be readily driven or forced into the ground, and may be from one to three inches in diameter.

9. Any suitable well-known pump may be applied to raise the water up through the tube to the surface or above it.

10. I am aware of James Suggett's patent of March 29, 1864, and I disclaim all secured to him therein.

11. Having thus fully described my invention, what I claim and desire to secure by Letters Patent is—

12. The herein described process of sinking wells where no rock is to be penetrated—viz, by driving or forcing down a rod to and into the water under ground, and withdrawing it and inserting a tube in its place, to draw the water through, and substantially as herein described.

N. W. GREEN.

Witnesses:
A. B. STOUGHTON,
JOS. PECK.

which the water is to be drawn may be the instrument which produces the well by the act of driving it into the ground to the requisite depth.

6. To enable others to make and use my invention, I will proceed to describe it with reference to the drawing, in which—

7. Figure 1 represents a portion of the pointed rod above mentioned, and Fig. 2, a portion of the tube which forms the casing or lining of the well.

8. The driving rod A, I construct of wood or iron or other metal, or of parts of each, with a sharp point, B, of steel or otherwise, to penetrate the earth, and a slight swell, A, a short distance above the point, to make the hole slightly larger than the general diameter of the rod. This rod I drive by a falling weight or other power, into the earth until its point passes sufficiently far into the water to procure the desired supply. I then withdraw the rod and insert in its place the "air tight" iron or wooden tube B, which may be slightly contracted at its lower end to insure its easy passage to its place. In general this tube B, I make of iron, and of a thickness that will bear a force applied at its upper extremity sufficient to drive or force it to its place; and where a large or continuous flow of water is desired, I perforate this tube near its lower end to admit the water more freely to the inside.

9. The perforations C, may be about one half of an inch in diameter, less or more, and from one to one and a half inches apart, and the perforations may extend from the bottom of the tube upward from one to two feet.

10. The diameter of the tube should be somewhat smaller than the diameter of the swell A, on the drill end of the driving rod A.

11. In localities where the water is near the surface of the ground and the well is for temporary use only, as in the case of a moving army or for temporary camps, lighter and thinner materials than iron may be used for making the tubes, as for instance, zinc, tin, copper or sheet metal of other kind, or even wood may be used.

12. The rod may be of any suitable and practical size that can be readily driven or forced into the ground, and may be from one to three inches in diameter.

In the reissue we find in paragraph No. 4, the last clause reads: "And through and from which the water may be drawn by any well known or suitable form of pump."

This clause, as will be seen, covers all the allusions to a pump made in the original. It suggests all that is suggested in the original. That is, that a pump is to be inserted in this tube to draw out the water.

These allusions to the pump clearly indicate that a pump is to be inserted in the tube, which is to be from one to three inches in diameter. But in this thirteenth clause of the reissue for the first time we are told that the pump, when necessary, may be attached to the tube by an air-tight connection. Nothing of this is hinted at in the original, nor is it shown in any drawing; nor was it contemplated according to anything appearing in the statements made to the Patent Office before the original patent was issued.

These matters that we have pointed out we think are a clear addition to the scope of the patent. It is increased in its effect by the addition of these matters to which we have referred, and which matters are an enlargement of the scope of the patent by the reissue, and were not stated or hinted at in the original: neither the specifications or the drawings giving any clue to them.

Then if we take the claim in each we will see that there is a material variation in the claim. These when examined, will show that his claim is a different invention in the reissue than in the original. If the name and other parts of the specifications were different, we should say that these two claims were for an entirely different invention.

By reading the claims alone, unaccompanied by the names of the party and other matters appearing on the face of the papers, one would come to the conclusion that here were patents for two different ways of making wells.

Then if we turn again to the original specifications we find at paragraph ten the following statement: "I am aware of James Suggett's patent of March 29th, 1864, and I disclaim all secured to him therein."

This disclaimer no where appears in the specifications of the reissue.

We claim that by leaving out that matter the patentee has tried to enlarge the scope of his patent, and that if the scope is enlarged by the omission of any matter in the original, then the reissue is as invalid as though enlarged by the addition of new matter to the reissued specifications.

It would make no difference in the effect that the reissue would have, whether you enlarged it by adding new matter, or by the omission of some substantive matter that was in the original, whereby the scope of the patent was restricted.

So we claim that this omission, relieving the patent as it does from the restriction of the matters patented to James Suggett, enlarges its scope, allows the complainants to claim that their patent is infringed when it is not, and thus enlarges its scope, and is therefore illegally issued, and void.

In Russell vs. Dodge, 3 Otto, 463, the Court says: "And as a reissue can only be granted for the same invention embraced by the original patent, the specifications could not be substantially changed, either by the addition of new matter or the omission of important particulars, so as to enlarge the scope of the invention as originally claimed."

In that case the original patent was for treating skins when in process of tanning, with hot fat liquor. In the reissue the matter of heating the liquor was not specifically claimed, but it was claimed for treating skins in the process of tanning with fat liquors. This reissue was held invalid.

In the case of the Giant Powder Co. vs California Vigorit Powder Co., 4 Fed. Rept. 720, the Court says: "The original patent covers a compound of nitro-glycerine and any inexplosive porous absorbent, which will take up the nitro-glycerine and render it safe for transportation, storage and use, without loss of its explosive power." "The reissued patent enlarges the scope of the invention so as to embrace a compound of nitro-glycerine with any porous substance, explosive or inexplosive." This change the Court says, invalidates the patent.

If that change will so invalidate the patent in the case considered by that Court it seems to us that the changes made in this case will invalidate the reissue.

Thus we take the position:

First, that the original specifications are so complete and full that there was no legal grounds on which a reissue could be asked, citing Revised Statutes, section 4916.

Lockwood vs Morey 5 Wall, 230.
Russell vs. Dodge, 93 U. S. (3 Otto,) 463,
Railway vs Sayles, 97 U. S. (9 Otto) 563,
Giant Powder Co. vs. California Vigorit Powder Co., 4. Federal Reporter, page 722,
Flower vs. Rayner, Fed. Reporter, Vol. 5, p. 793.
Searls vs. Bouton, 12 Fed. Reporter, p. 625, on p. 626.

Second. We take the further ground that the scope of the patent has been enlarged by the changes and omissions as pointed out by us, and that for that reason, also, the reissue is invalid, citing the authorities above, and also the following:

Powder Co. vs. Powder Works, 8 Otto, 138, 4 Fed R. 411,
Putman vs. Tinkham, Reporter, (of Boston,) vol. 11, p. 78,
Siebert Cylinder Oil Cup Co. vs. Harper Steam Lub. Co., Vol. 4, Fed. Reporter, p. 328,
Root vs. E. N. Welch Mfg. Co. 4 Fed. Rep. 423,
Washburn & Moen et al vs. Haish, 4 Fed. Rep., 900.; on page 910 especially,
Novelty Paper Box Co. vs. Staples, 5 Fed. Rep., 919.

In the case of McMillan, et al. vs Russell, et al., the Court said: "Whether two patents cover the same invention must be determined by the tenor and scope of their claims, not by the descriptions in their specifications." 1 Fed. Rept. 722.

If this is good law the converse must be true, that when the claims are so different as to be for two different patents, then if one is the reissue of the other the reissue is for a different invention, and is invalid. Applying that principle to this case the reissue must be held void.

In the case of Smith, et al., vs Merriam, et al., 6 Fed. Rept. 903, the Court holds, "That when the patent is for stay strips to cover seams to boots and shoes, it cannot be reissued so as to cover a stay strip with a recession to hug the seam put in the strip before sewing on." Such a variation does invalidate the patent.

In the case of the Novelty Paper Box Co. vs Staples, 5 Fed. Rept. 919. "The second claim of the reissue, which if regarded as simply introducing the tongue or corners, without preserving the locking qualities referred to, it is such a departure from the original invention as to render the reissue invalid."

In Atwater Mfg. C. vs Beecher Mfg. Co., 8 Fed. Rept. 608, "The introduction of new matter into a reissue renders the reissue void."

In Meyer vs Maxheimer, 9 Fed. Rept. 99, "A reissue that covers more than the original is void."

In the N. Y. Bung & Bushing Co. vs Hoffman, 9 Fed. Rept. 199, "When the original is for a particular form of wooden bushing in an iron one, a reissue for any form is broader than the original and is therefore invalid."

In the case of Kells vs McKenzie, et al. by Brown, J., E. D. of Mich., 9 Fed. Rept. 284, the Court cities Seymour vs. Osborn, 11 Wall, 544, and Battin vs Taggert, 17 How. 74. and holds that "There is nothing here tending to show that his original patent was inoperative or invalid by reason of a defective or inefficient specification." And then holds the reissue invalid.

The Court also cites

Russell vs Dodge, 93 U. S. 460,
Powder Co. vs Powder Works, 98 U. S. 126,
Turbine Mfg. Co. vs Ladd. 102 U. S. 408.

And holds the reissue void for the addition of new matter which enlarges the scope of the patent.

The variances between the original and reissue in these cases are not any greater or more glaring than in this case.

We have examined a large number of cases, and have not found one where the variance is so great as it is in this case but what the Courts have declared is void on that ground.

In the case of Edward Miller & Co., vs The Bridgeport Brass Co., decided by the Supreme Court of the U. S., January 9, 1882, and published in 21 O. G., 201,

Bradley J. says "These after-thoughts, developed by the subsequent course of improvement and intended by an ex-

pansion of claims to sweep into one net all the appliances necessary to monopolize a profitable manufacture, are obnoxious to grave animadversion. The pretense that there was an inadvertance and oversight which had escaped the notice of the patentee for fifteen years is too bald for human credence. He simply appealed from the judgment of the office in 1860 to its judgment in 1876; from the commissioner and examiner of that date to the commissioner and examiner of this, and upon a matter that was obvious on the first inspection of the patent. If a patentee who had no corrections to suggest in his specification, except to make his claim broader and more comprehensive, uses due diligence in returning to the Patent Office and says: "I omitted this;" or "my solicitor did not understand that;" his application may be entertained, and on a proper showing, corrections may be made; but it must be remembered that a claim of a specific device or combination and an omission to claim other devices and combinations apparent on the face of the patent, are in law a dedication to the public of that which is not claimed. It is a declaration that what is not claimed is either not the patentee's invention, or if his, he dedicates it to the public. This legal effect of the patent cannot be revoked unless the patentee surrenders it and proves that the specification was framed by real inadvertance, accident or mistake, without any fraudulent or deceptive intention on his part, and this should be done with all due diligence and speed, Any unneeessary laches or delay in a matter thus apparant on the record affects the right to alter or re-issue the patent for such cause. If two years public enjoyment of an irvention, with the consent and allowance of the inventor is evidence of abandonment and a bar to an application for a patent, a public disclaim in the patent itself should be construed equally favorable to the public. Nothing but a clear mistake or inadvertance and a speedy application for its correction is admissible when it is sought merely to enlarge the claim."

The Supreme Court in this case, in commenting on the misuse of the law as practised by patentees and indulged by

the Patent Office, says: "The power given by law to issue a new patent upon the surrender of the original for the correction of errors aud mistakes, has been greatly misunderstood and abused." * * "It was carefully confined to cases where the patent was invalid or inoperative by reason of a failure to comply with any of the terms and conditions prescribed by the law for giving a clear and exact description of the invention, and where such failure was due to inadvertance, accident or mistake, without any fraululent or deceptive intention. This being shown, a new patent with a correct specification was authorized to be issued for the same invention." * * * "The fifty-third section of the act of 1870, which was the law on this subject when the re-issue in the present case was granted, was in the following words:" "*Whenever any patent is inoperative or invalid by reason of a defective or insufficient specification, or by reason of the patentee claiming as his own invention or discovery more than he had a right to claim as new, if the error had arisen by inadvertance, accident or mistake, and without any fraudulent or deceptive intention, the commissioner shall, on the surrender of such patent, and the payment of the duty required by law, cause a new patent for the same invention and in accordance with the corrected specifications, to be issued to the patentee.*"

"It will be observed that while the law authorizes a re-issue when the patentee has claimed too much, so as to enable him to contract his claim, it does not in terms, authorize a reissue to expand his claim. The great object of the law of reissue seems to have been to enable a patentee to make the description of his invention more clear, plain and specific, so as to comply with the requirements of the law in that behalf, which were very comprehensive and exacting."

Upon the question of delay in applying for a reissue, the Court further says:

"When, if the claim is too narrow, that is, if it does not contain all that the patentee is entitled to, the defect is apparent on the face of the patent and can be discovered as that document is taken out of its envelope and opened, there

can be no valid excuse for delay in asking to have it corrected. Every independent inventor, every mechanic, every citizen is affected by such delay, and by the issue of a new patent, with a broader and more comprehensive claim. The granting of a reissue for such a purpose after an unreasonable delay is clearly an abuse of the power to grant reissues, and may justly be declared illegal and void. It will not do for the patentee to wait until other inventors have produced new forms of improvement, and then, with the light thus acquired, under pretense of inadvertancy and mistake, apply for such an enlargement of his claim as to make it embrace these new forms."

On this subject of enlarging the scope of the patent by a reissue, and to illustrate the necessity of the restriction, the Court in this case says: "Express power was given to grant a reissue for the purpose of making a claim more narrow than it was in the original, without any mention of a reissue for the purpose of making a claim broader than it was in the original, it is natural to conclude that the reissue of a patent for the latter purpose was not in the mind of Congress when it passed the laws in question, It was probably supposed that the patent would never err in claiming too little. Those who have any experience in business at the Patent Office know the fact that the constant struggle between the Office and applicants for patents has reference to the claim. The patentee seeks the broadest claim he can get. The Office, in behalf of the public, is obliged to resist this constant pressure."

We wish also to call your attention to the case of Campbell vs James, 21 O. G., page 337; on page 343 the Court says:

"We have seen that his original patent was for a specific blotting device, and for the combination of such specific device with a post-stamping device in the same instrument. Could he in a reissue of the patent, lawfully make the broad claim of the combination of any and all devices for blotting and post-stamping at one and the same time, in one and the same instrument."

"This would be, it is true, only adding a new claim to his

patent but greatly enlarging its scope and making it to embrace every kind of double stamp that can be conceived."

"Having obtained a patent for his specific device and combination, if he afterwards wished to claim the general combination and had not already abandoned it by taking a narrower patent, he was bound to make a new application for that purpose." "Patentees avoid doing this when they can and seek to embrace additional matters in a reissue in order to supercede and get possession of the rights which the public by loss of time or other causes have acquired in the mean time." "It is for this very reason that the law does not allow them to take a reissue for anything but the same invention, described and claimed in the original patent."

To call the attention of the Court more specifically to the application of these cases to the one at bar, we will ask the Court to examine again the specifications in the original and reissued patent. The original does not any where claim for attaching a pump to the tube that forms the lining of the well.

The original does not in any place speak of having the earth packed around the tube. On the contrary the last clause of the 6th paragraph, as we have numbered them says: "The diameter of the tube should be somewhat smaller than the diameter of the swell on the drill end of the driving rod A." showing distinctly that Col. Green did not at that time contemplate that it was necessary that the pipe should fill the hole made by the rod, full, so as to have the earth tight around the tube.

The original does not claim that the tube must be air-tight throughout its entire length.

The reissue has that matter added. We do not wish again to go over all these differences between the original and reissue, but wish to call the Court's attention to these changes that they may again examine these claims and specifications in the light of these decisions.

In the case of Smith vs Nichols, 21 Wall. 119, the Supreme Court says:

"A mere carrying forward of new or more extended application of the original thought, a change only in form, proportions or degree, the substitution of equivalents doing substantially the same thing in the same way, by substantially the same means, with better results, is not such an invention as will sustain a patent."

In Campbell vs James, et al., decided January 9, 1882, by this Court, Bradley J. writing the opinion, on page 341, 21st O. G., the Court says:

"When a patent, fully and clearly, without ambiguity or obscurity describes and claims a specific invention, complete in itself, so that it cannot be said to be inoperative or invalid by reason of a defective or insufficient specification, a reissue cannot be had for the purpose of expanding and generalizing the claim so as to make it embrace an invention not described and specified in the original."

What we claim is that in the specifications to Green's original patent, there was no ambiguity or obscurity, and that the invention was fully and clearly described.

When, however, he applied for the reissue, he then added to the claims the fact that "the earth was packed around the tube and not removed upward as in boring." This was not hinted at in the original.

He also added, "that the tube must be air tight throughout its length and that a pump must be attached air tight to its top." None of these things were mentioned, described or hinted at in the original, nor were they shown in the drawings.

We say that by the addition of these things to the patent, the patentee sought to enlarge its scope and expand its claims. In this case of Campbell vs James, the Court cites the case of Burr vs Duryee, 1 Wall 577, as saying:

"The surrender of valid patents and the granting of reissued patents thereon, with expanded or equivocal claims when the original was clearly, neither "inoperative nor invalid" and whose specifications are neither, "defective nor insufficient," is a great abuse of the privilege granted by the statute and productive of great injury to the public."

"This privilege was not given to the patentee or his asignee in order that the patent may be rendered more elastic or expansive, and therefore more available for the suppression of all other inventions."

In the case of Streit vs Lauter, decided by Gresham, of Indiana, 11 F. R. 309, on page 313 the Court says:

"There was no mistake in the description of the complainant's invention in the original patent, and in the reissue it is obvious that there was an effort to embrace the rigid connection which was discarded in the first instance. But waiving all that has been said against the complainant's right to a decree, he has lost his right to a reissue, if he was ever entitled to one, by unreasonable delay."

"If the original claims were too narrow to secure to the patentee the full benefit of his discovery, the mistake was apparant at the time the patent issued, and the granting of the reissue patent with broader claims, on an application made after the lapse of almost five years, was unjust to the public and unauthorized. Miller vs Bridgeport Brass Co. 21 O. G. 201; James vs Campbell ibid 337." Bill dismissed for want of equity.

It will be seen by examining these cases that the Supreme Court of the United States has decided that a reissue obtained, as this was, and for the purpose evident in this one, was not lawfully obtained, and therefore was void.

In Miller vs Bridgeport Brass Co. 21 O. G 201. In summing up the conclusions of the court in that case Mr. Justice Bradley says, (page 203:)

"Now while, as before stated, we do not deny that a claim may be enlarged in a reissued patent, we are of opinion that this can only be done when an actual mistake has occured, not from a mere error of judgment, (for that may be rectified by appeal,) but a real *bona fide* mistake, inadvertently committed, such as a court of chancery, in cases within its ordinary jurisdiction, would correct."

We claim that in obtaining the reissue in this case, Mr. Green brought himself within the rules laid down by the

Supreme Court in Miller vs Brass Co., and Campbell vs James and that the time allowed to elapse after the original was granted and the reissue was applied for, is sufficient to forfeit all rights to an expanded reissue.

PRIOR USE.

In presenting our argument on the subject of the prior use of this claimed invention of Nelson W. Green, we wish, in the first instance, to call the Court's attention to the difficulties that we find in our way.

Through a series of decisions that begin with the early history of our patent cases, we find that the Courts of the United States have adopted the construction that the issuing of a patent by the proper government official makes it a *prima facie* proof that the patentee is the first and original inventor of the thing patented.

If the Courts stopped there it would not be so inconsistent with the genius of our institutions and so injurious to the rights of the public. But our Supreme Court has said that the defendant who alleges prior use as a defense must prove his defense beyond a reasonable doubt.

Some of the Circuit Courts have carried that doctrine further, and have said that the defendant must prove his case beyond all doubt; that the grant by the United States official was a grant for a consideration, and the Courts must construe everything in favor of the grant.

They make it more onerous on the part of a person claiming a civil right as against another person, than our Courts have ever required to convict of a crime.

This is judicial legislation and of a very dangerous character. It is requiring, by judicial construction, more than there is any warrant in law or the Constitution for doing.

The Courts of the United States, by their decisions, have built up around a patent a bulwark not warranted by the law granting patents, nor by the Constitution authorizing Congress to make a law for the protection and encouragement of inventors.

The Courts of the United States have not surrounded any other grant of the Government with such a bulwark. No grant of land, or mineral right, or water privilege, is held to carry with it anything more than *prima facie* evidence of the right of the holder of the grant to the thing granted. Preponderance of evidence is in all such cases held to be sufficient to overcome the *prima facie* case made by the issuing of the document by the proper officer of the Government.

That is all that is required in this country to set aside a grant of either of these matters when some other party claims a right by reason of priority of possession or use. Then we are led to inquire whence arose this usage of the United States Courts of giving to a grant of a patent such a sacred and unimpeachable character.

In examining the earlier decisions we find that they rest their constructions of this grant, not on the law of the United States authorizing the grant, but on the construction given by the Courts of England to the patents given by the king. These patents were held sacred and unimpeachable by the Courts of England, at a time when the king was held to be the owner of all the property and the persons of his subjects. When it was held in law that the king being by the Grace of God ruler of the people, he could give to any of his subjects such rights as might please his fancy, and exclude all others from enjoying the same, or from interfering with the exclusive enjoyment of such rights by the subjects to whom granted.

Thus this difficulty that we find in the proof of prior use has grown up through a series of decisions that began in the early existence of our patent laws, and by the Courts then following the decisions of the English Courts, made at a time when the king exercised prerogatives which the Constitution of the United States prohibits to the Government in either of its parts and to the triune combined.

As we have before stated, the Courts have not surrounded any other grant of the Government with any such decisions. They have left them with their *prima facie* effect only and

have allowed them to be overcome by a preponderance of evidence. While this grant has been held to be as sacred as the life or liberty of a citizen, and to overcome its force and effect the party claiming prior use is held to prove it beyond a reaable doubt; and some judges have said that all doubts must be removed.

Coming to this case at bar with the full knowledge of these difficulties to be overcome, and not having faith in our persuasive power to think we can persuade this Court to establish a new rule that shall be consistent with the laws of the United States, and the custom and usage of its people, we have on this subject endeavored to make our cases of prior use so clear that the Court must find that we have removed all reasonable doubts.

We know that it is easy for a Court to say, I am not convinced beyond a reasonable doubt. The evidence of prior use fails to convince me that the parties might not have been mistaken in the date. They are undoubtedly honest in their views, but they certainly are mistaken; and such remarks, which while they serve to slur over the case and pass it by for that time, do not convince either of the parties or any one else of the justness of the decision.

Our United States Court, in the case of Miller vs Smith, 5 Fed. Rept. 359-364, have laid down the rule that it is the duty of the trial Court to give full and due weight to all the evidence of the defence, and to consider it fairly and equitably.

They cite Wood vs Rolling Mill, 4 Fisher, 550-560, and Parham vs Sewing Machine Co., Ibid, 468-482, and Hawes vs Antisdel, 8 O. G. 6852.

Our proof on the case of prior use, alleged in our answer in the following items, to-wit: (on third page of answer, sixth paragraph from top of page.) "This defendant further answering states, that said invention was known and used in all its parts, as described in said complainant's bill of complaint and his letters patent, long before the pretended invention claimed to have been made by Nelson W. Green, and was known to and used by the following named persons, now re-

siding in Buchanan county, Iowa, in said county in the spring of 1861, [here follow names,] and that such knowledge and use was open and notorious and known to the public at that time and place, and that such use was before the pretended invention by said Green," consists of forty-seven witnesses, three deeds of real estate, one chattel mortgage and the note, one receipt from C. T. Kimball to Thomas Sherwood, the report of the Adjutant General of the State of Iowa as to Company E of the Fifth Iowa Infantry; Company C. Ninth Iowa Infantry; Company B. Fourth Iowa Cavalry; marriage certificate of Jed Lake to Sarah E. Meyer, dated January 1, 1861; the Buchanan County *Guardian*, published in July, 1861; the entries in the account book of Orlando Cobb, and various other matters, which in our abstract of the testimony, makes about two hundred pages; and in the record, would probably make over one thousand pages.

In abstracting this evidence as to the well, known and designated in this argument as the Independence well, we have set out the evidence in the order of its importance, and not in the order in which it was taken. We have, however, made our references so that we think the evidence can be easily found in the record. Placing our witnesses in groups we will first take those who saw the well made, and naming them in their order we have C. T. Kimball, Thomas Sherwood, Dr. George Warne, T. H. Tyson, J. E. Trexler, J. H. Campbell, A. F. Williams, S. P. McEwen, S. S. Allen and A. Hageman.

Taking the testimony of Kimball, aged 49 years. and Sherwood together, it is as follows: We were keeping the hotel here in Independence, Iowa, known as the White House, now known as the Merchant's Hotel. It is situated on the east side of the river. We went into that hotel together in October, 1860, and Kimball sold out to Sherwood about the first of May, 1861, and moved out of the house the first week in May, 1861. A short time before Kimball moved out of the hotel a man came there and put up with us. The next morning he told us that he wanted to show us something new. He took us down into the basement of the hotel, into a room formerly

used as a saloon, and there he had in a box a piece of gas pipe, with a point in the end of it, and some holes drilled into it, up the sides of the pipe some foot or eighteen inches. He told us that he could make a well by driving this pipe into the ground into water, and then put a pump on top of it and pump out water. This piece of pipe was some four feet long, or about that, and he had other pieces of pipe not perforated. They were somewhere from three to five feet long each; could not be positive as to the length. We know that this was while we kept that hotel together. It was while Kimball was in the hotel, and a few days before he moved out. It was the last of April or first of May, 1861. Jed Lake and his wife boarded with us that winter. It was the same winter that they were married. They did not board with us at any other time. Jed Lake and wife went to keeping house about the same time that Kimball moved out of the hotel.

This far Sherwood and Kimball testify so nearly alike that we have not thought it worth while to separate their statements. Sherwood was examined February 28, 1880; C. T. Kimball was examined in April, 1880. When Sherwood was examined Kimball was away as the advertising agent of a minstrel troupe, and had no opportunity to consult with Mr. Sherwood, and did not do so.

As to making the well, Kimball testifies: After he had shown us the tube he proposed to make a well. There was some talk of having him put a well in the cellar. Mrs. Sherwood opposed that; she said we had one good well and that was enough. This man and I went across the river, on the west side of the river, out near the corner of the block where Mr. Z. Stout now lives, a little south of Main street. He got some boxes or horses or something to stand on, set the pipe up on the ground and drove it down; then he put on another piece of pipe and drove that down. I went back to the hotel before he finished. I was over there again the next day and saw them pump water. It was an iron, pitcher-mouthed pump; I pumped water out of it. There were no buildings or improvements on the block at that time, where Z. Stout now

lives, and there was no building or improvements on the block east of that block. This well was either near the north-east corner of the Stout block, or in the street east of that block. I pumped water at this well and I saw others pump at it; there appeared to be plenty of water. R.P. 1678

Mr. Sherwood testified as stated above and then said that he did not go over to see the well made, but he did go over the river that day or the next and saw the well in operation; saw them pump water at it; saw it several times after that. Knows that it was made while he and Kimball kept the hotel together: they went into the hotel in October, 1860, and Kimball went out in April or May, 1861, and this was a few days before Kimball went out of the hotel; shows mortgage given to A. H. Trask by him, dated October 26, 1860, to secure fifty dollars; says this money he borrowed to buy things to start the hotel with; shows receipts signed by C. T. Kimball dated April 27, 1861, for $35.42, which he says he paid Kimball towards his interest in the hotel; also order of P. Tweeddale to James Ainsworth, to pay to Sherwood & Kimball six dollars on board, dated March 2, 1861; also receipt of J. K. Hallum, dated April 20, 1861, that their account is paid in full. R.P. 1833

Kimball identifies the receipt given by him to Sherwood for $35.42, and says it was for his interest in the hotel, and paid about the time he (Kimball) went out of the hotel, and about the time this well was made; he also identifies the other bills as some given to the firm while he and Sherwood were in company. R.P. 1652

Dr. George Warne, aged 58 years, testifies that he lives at Independence, on west side of the river and north of Main street; has lived there since 1856. Some time in the spring of 1860 or 1861, I was going home to dinner from the east side of the river; when I was across the river near the west end of the bridge I saw some men at work on the common south of Main street, apparently trying to drive a bar of iron into the ground; one man stood upon something and was driving with some kind of a mall; I went where they were and asked some one what they were doing; he said, "Making a well;" I con-

sidered myself sold and asked no more questions; I went on on home, got my dinner, and after a while came back by there and they were pumping water with an iron pump; I lived about twenty-four rods north and west of this well; there was nothing between my house and this well at that time; I could see the well from my house. I know it was in 1860 or 1861; I am not positive as to which of these years. I saw others pump water there a great deal; this well remained there some time, I think several months; I did not see them commence the making of this well; I saw them driving on the pipe, and when I came back the well was done. R. P. 1710

T. H. Tyson, aged 48 yoars, testifies, In the spring of 1860 or 1861 I saw some men at work on the north-west corner of the block where the Presbpterian church now stands; I went where they were and they told me that they were going to make a well there. They had a piece of gas pipe with a plug in the end and perforations in the side of the pipe above the plug; they drove this pipe into the ground, and then put on another piece and drove that, and then put on another. When they got to water they put an iron pump on the tube, and pumped out the sand and got water in that way. I was there the biggest part of the time while they were at work putting it down. I was not hired to work; I was there on account of the novelty. There were no buildings on Block 3, Stoughton & McClure's 2nd Addition to Independence, in the spring of 1861; E. Ross built a house on the south-east corner of that block in the fall of 1861. This well remained there the biggest part of that summer; I pumped water out of it and I saw others pump water; it was used a great deal; I saw another well of similar kind on that block in 1865 or 1866, and I had a well put down by E. S. Hovey in 1868 or 1869, when the Presbyterian Church was built. R. P. 1724+1492

J. E. Trexler, aged 60 years, testifies, I now live at Waterloo, Iowa; in 1861 I lived at Independence, Iowa; I then lived on the south-west corner of block 22, Stoughton & McClure's 2nd Addition to Independence, Iowa. I owned two houses; one an old house right on the corner of the block

next the street, one a little way east of that. On the first of June, 1861, I moved out of my house on to the east side of the river, where I kept a restaurant; before I moved out of my house some little time I saw some men at work on the block across Main street, south of my house, and near the north-west corner of that block; they had some iron tubes and one with holes in the lower end; they got something to stand on, and set that tube up on the ground and drove it into the ground; then they put on another piece of tube and drove that down; I do not know how many pieces they put on, but I should think two or three: after a while they put a pump on top of the tube and pumped and got water; this well stood there some time; it was there when I moved over the river on the east side; it was used a great deal; a great many came there; it was a curiosity; this well was put down the fore part of May, 1861, and was left there some time; it was put down the same season that Captain D. S. Lee raised his company for the war of the late rebellion; I did not go over to where they made this well; I saw them from my house and lot across the street; I did not live on the west side of the river in 1862; I did not live there after June, 1861; I lived on the east side of the river to 1866, and then I moved to Waterloo.

R. P. 1822

J. H. Campbell, aged 53 years, testifies: I have lived in Independence, Iowa, since April 1856. At one time I saw some men driving a tube into the ground, on the west side of the river, near north-west corner of the block where the Presbyterian Church now stands; I was out driving around town, and drove over there; they said they were making a well; I did not stay very long; I drove around some and came back, and saw a pump on the pipe and parties pumping water; I pumped water there myself several times; I saw others pump; there was plenty of water; it was good water.

As to the time when he saw this well, witness testifies: There was a cricket club here; C. F. Herrick, C. L. White, A. B. Lewis, W. S. Marshall, Thomas Blondin, Col. Lake and others belonged to the club; I was in the habit of going over the river to see them play; they played on the block where

Z. Stout now lives; this well was there when they were playing cricket ball there; C. L. White, W. S. Marshall, A. B. Lewis and Thomas Blondin went into the war in Captain D. S. Lee's company; I think after they went away there was no cricket played here; so far as I know I did not see any; this well was there when they played cricket.

Our documentary evidence, to-wit: Two copies of the Buchanan County *Guardian*, one dated July 9, 1861, and one dated July 16, 1861, show that Lee's company left here between July 9 and 16, 1861, with these men among the company.

The Adjutant General's report shows that they were members of Captain Lee's company, E., Fifth Iowa Volunteer Infantry, and were ordered into quarters June 29, 1861, and were mustered into the U. S. service at Burlington, Iowa, July 15, 1861, thus showing that this well was put down before July 15, 1861, as this witness testifies.

We wish to now call particular attention to the date this company left Independence, Iowa, for the service. So many witnesses refer to this well as being at this place when Captain Lee's company was drilling here before going to the war, and so many others refer to the cricket club that they become very important factors in our evidence. And we wish to call attention now to the fact that C. L. White, Thomas Blondin, A. B. Lewis and W. S. Marshall were important members of this cricket club; that all of them went away to the war in this company raised by D. S Lee; that after that company left no cricket was played at Independence, Iowa, and especially none on the block where Z. Stout now lives, the same being Block 4, Stoughton & McClnre's 2nd Addition to Independence, Iowa.

R. P. 180 34/820

S. S. Allen, aged 52 years, testifies: I lived on the north-west corner of Block 7, Stoughton & McClure's 2nd Addition to Independence, Iowa, from 1857 to 1871; I saw some men put a well down, either on north-west corner of Block 3, same addition or in street west of that block somewhere near there; they set an iron tube, with a plug in the lower end, up and drove it into the ground; then put on other tubing and drove

that down; they took this up and put it down two or three different times, I suppose to show how it would work in different places; they put a pump on top of the tube and pumped water and sand; this pump was there a long time; it was there the same summer that Captain Lee raised his company to go into the war, they brought water from there to put out a fire in the house on the north-east corner of Block 7; a Mr. Brown lived there at the time; I think D. S. Deering moved into that house after Brown moved out; I think Deering moved in there in 1862 or 1863; I remember that a cricket club played on the grounds where Z. Stout now lives; C. L. White, T. Blondin, A. B. Lewis and W. S. Marshall were members of that club; after they went to the war in Lee's company there was no cricket played there; while that cricket club was playing on the grounds described, they used to get water at my well; after this driven well was put down the cricket club went to this driven well for water; there was no cricket played on that ground, as far as I know, after Captain Lee's company went to the war; this well was put down there in 1860 or 1861; I saw them put down this well, and saw it used a great deal; it furnished an abundance of good water; it was used for watering horses, and almost everybody would try it as they went by.

R. P. 1707

A. F. Williams, aged 56 years testifies: April 1, 1861, I moved to the west side of the river, at Independence, Iowa; some time in the spring, I could not give the date, I passed by the block where the Presbyterian Church now stands; I saw some men driving on an iron rod, as it appeared to me; I did not stop and ask any questions; they appeared to be driving this rod into the ground; I went by there the next day about the same time, and saw some men pumping water and drinking there; I stopped and drank myself; all I could see above the ground was the pump and pipe; the pipe was above the ground about a foot or more; there was no hole in the ground outside the pipe; I saw it several times that summer, passed right by it all summer; it was in 1861 that the well was there; I went to Michigan that fall, and came back again in 1865; it

was before I moved to Michigan; I moved to Michigan and was there four years; I am not in any manner interested in these suits. R. P. 1767 + 1892

S. P. McEwen, aged 54 years, testifies: I have lived in Independence, Iowa, since June, 1853; never heard of a well being made by driving a tube into the ground and attaching a pump to it, until I saw it; I saw such a well the first time on the west side of the river at Independence, Iowa, in the spring of 1861; it was on the north-west corner of the block on which the Presbyterian Church now stands, the well was made by driving an iron tube into the ground and attaching a pump to it; the tube stood some eighteen or twenty inches above the ground, with a small cistern pump attached to the top of it; I know it was in 1861, because it was when the first call for troops was made, and every body was excited; Captain Lee's company was raised here that summer and got water there when they were drilling; the well stood there nearly all summer; I lived on the east side of the river; I was building a house for Lyman Nethaway on the west side of the river, and I passed by it nearly every day. Jed Lake was married in the year 1861, and he and I were old cronies; one Sunday after he went to keeping house I went to his house in the morning, and asked him and his wife to come down to my house; his wife and mine were not then acquainted; when they came down we left the women to get acquainted, and he and I went to see this well; we called on Alfred Ingalls, now in Texas, and he went with us; we all pumped and drank at this well; I know the first well was put down in 1861, and there was another well put down there in 1862 or 1863; along there somewhere, I can't tell positively; the men who put down this well were strangers; they stopped at the White House, kept at that time by Kimball & Sherwood; it is now known as the Merchant's Hotel. R. P. 2157

The certified copy of the marriage certificate of Jed Lake to Sarah E. Meyer, shows that they were married January 1, 1861, by Rev. John Fulton.

These witnesses are those who saw this well made, and tes-

tify to the manner of making the well. These nine witnesses all say that a section of pipe was driven into the ground the length of the piece; then other pieces were attached and driven down until water was reached, and then a pump attached to the pipe and water and sand first pumped and then clear water; they all lived in the vicinity of the well, except Kimball, Campbell and McEwen; they lived east of the river. Campbell was by there frequently, and McEwen was building a house where he had to pass this place every day to and from his work. These men fixed this date beyond a question as being in April, May or June, 1861; it was in the spring or early summer of that year, and remained there nearly all summer.

We have quoted this evidence quite fully, for the purpose of connecting it with the evidence of the other witnesses whom we have examined, and whose evidence we will now proceed to examine.

We shall go over the evidence more rapidly, referring to the main points of the testimony of each witness. In order to do that as we believe we ought to, it will be necessary for us to group it under several heads, and to refer to each witness under each of the several heads.

Then we take first the evidence of those who saw the well made, and testify to it as 1861, having positive data on that subject. We have above given a summary of their testimony, which we will not repeat.

We propose next to give the names and substantially the testimony of those who saw the well, and the reasons why they fix the date in 1861. R. P. 1697

Frank S. Trask, aged 33 years, testifies: I lived in Janesville, Wisconsin, up to the spring of 1861; I came to Independence, Iowa, with my father, M. W. Trask, about the first of May, 1861. and stayed here until about October 1, 1861, and then went back to Janesville; while at Independence, Iowa, I worked for A. H. Trask, my uncle, in his livery stable here; I saw on the west side of the river at Independence, Iowa, that summer, a pipe sticking up out of the ground

and a pump on top of it; it was an iron pipe and an iron pump; there was no appearance of any digging there; it appeared as though the pipe was driven into the ground and the pump screwed on top of it: I pumped water there myself a great many times, and I saw others pump water at this well; there was an abundance of good water; it was near the north-west corner of the block where the Presbyterian Church now stands; I know it was in 1861, because I never was here in Independence before that spring, and I was not here again until 1867, except to pass through here in the fall of 1866; I saw this well soon after I came here; it was the first year of the war that I saw this well. R. P. 1717

M. W. Trask, aged 66 years, testifies: I know Frank S. Trask; he is my son; he lived with me in Janesville, Wis., until the spring of 1861, then I came with him to Independence, Iowa; I came about May 10, 1861; I left Frank here; he worked for my brother, A. H. Trask, in his livery stable here in Independence, Iowa; Frank S. Trask was never here before that time; he stayed with me at Janesville after that for several years; I fix the date because it was the first year of the war, and I sold out my livery stable that year and was out of business. R. P. 1920.

A. H. Trask, aged 48 years, testifies: I reside in Independence, Iowa, and have since 1854; I keep a livery stable; I know Frank S. Trask; he is a nephew of mine; prior to 1861 he lived in Janesville, Wis.; he came here in the spring of 1861, and worked for me in my livery stable that summer; in the fall he went back to Janesville, Wis., I knew J. M. Chandler in 1861; he lived on the east side of the river at that time; J. B. Turner, I did not know then; in 1866 Charles Brown and H. S. Cole had a livery team of me to go to Vinton; they got the team July 1, and returned it July 5; Brown was here putting in wells at that time. R. P. 1777/1912/1589.

S. M. Marquette testifies: I am fifty years of age; have resided in Independence since 1856; am a cabinet maker; some time in the spring of 1860 or 1861 I saw a pump at or near the north-west corner of the block on which the Presbyterian

Church now stands, on the west side of the river, at Independence, Iowa; I lived at the time right north of that, two blocks; I remember being at the well and pumping water, and seeing others pump; I was there once with Tom Tyson; he and I both pumped to see how easily it pumped; it was there before Captain Lee recruited his company for the war; I remember the well distinctly, and it was either 1860 or 1861 that it was put down.

On re-cross examination this witness states: I have heard of this kind of well being put down all along, from the time the first well was put down up to 1879. R. P. 1772

Oliver Marquette testifies: I am 40 years of age; am a cabinet maker; have resided in Buchanan county twenty-three years; I reside on the west side of the river at Independence; I saw a well on the west side of the river—a pipe sticking up out of the ground and a pump was attached to it; there was no hole outside the pipe; it was on the north-west corner of Block 3, Stoughton & McClure's 2nd Addition to Independence, Iowa; I saw this well about 1860 or 1861; it was after the hard times that commenced in 1858; I knew Captain D. S. Lee, and knew of his raising a company for the late war; this well was there about the time Lee was raising his company; I am sure it was in 1860 or 1861; am positive it was not as late as 1862. R. P. 1671+1676

Perry Munson, aged 52 years, testifies: I was in company with one D. S. Dunham; we bought a farm east of town in November, 1860, and I bought Dunham's interest in the farm in the spring of 1863; sometime in the summer of 1861 or 1862 we were bothered to get water, and I was in town and Dunham spoke to me about a driven well on the west side of the river; I went over to see it; I saw it, pumped water and looked at the well; it appeared to be a tube driven into the ground, and a pump attached to the top of it; after I had looked at this pump I went where they were playing cricket ball; they played on the block where Z. Stout now has his house; it was right west of this well; this kind of ball was new to me; I had never seen the like before; it was not base ball;

I remember three men that were there—Charles F. Herrick, C. F. Putney and Phil Bartle, that I knew; I asked one of them what kind of ball it was, and he said it was cricket ball; I know it was either 1861 or 1862, because it was while Dunham and I owned the farm together, and we only owned the farm together those two seasons. R. P. 1769+1817

T. J. Marinus, aged 47 years, testifies: I have lived in Independence, Iowa, since 1851; I have been deputy Clerk of Court and also Recorder; am now chief engineer of the city fire department; I saw a well on the west side of the river, at Independence, Iowa, in 1861, that was made by driving an iron tube into the ground and putting a pump on top of it; it stood near the north-west corner of Block 3, Stoughton & McClure's 2nd Addition to Independence; I pumped water out of it; I saw others pump; this well stood there several months; I should say two or three months, perhaps longer; I had a brother-in-law who went out in Captain D. S. Lee's company, E. Fifth Iowa Infantry; this well was there when that company was drilling before leaving here in July, 1861; I was at that well with this brother-in-law; his name was Richard Whait; this well was there when we played cricket on the block where Z. Stout now lives; we did not play cricket there after Captain Lee's company left here; Carl White, W. S. Marshall, A. B. Lewis, Tom Blondin, C. F. Putney and Richard Whait went out in that company of Captain D. S. Lee. R. P. 1792+1917

J. J. Travis, aged 46 years, testifies: I have lived in Independence, Iowa, since 1851; am farming and dealing in wood; I saw a well made by driving a pipe into the ground and screwing a pump on top of it; I saw this well in 1861; it was on the west side of the river at Independence, Iowa, somewhere from ten to twenty rods west of where the Presbyterian Church now stands; it was all a common there then; I could not be positive as to the distance; it was an iron tube sticking out of the ground, and a pitcher-mouthed pump on top of it; the ground appeared to be close around the tube; I saw water pumped from it; I fix the time as 1861, because it was

the first year of the war of the rebellion, and when Captain Lee's company was formed here; I was there at one time when the soldiers were drilling over there; it was the year that I farmed David Bright's land, the only year I resided out of town; I farmed David Bright's land the year 1861; I am positive that the well was there in 1861; I never knew when Green's patent was issued. R. P. 1693.

H. A. King, 63 years old, testifies: I reside in Independence, Iowa; I came here from Kalamazoo, Mich. in the fall of 1860; I went into the livery business the fall of 1860, and sold out my livery in June 1861; then I bought a hardware store; I bought out E. B. Candee, and went into the hardware business about the first of July. 1861; some time before I went out of the livery business I saw a well on the west side of the river, west of where the Presbyterian church now stands, that was a tube sticking up out of the ground and a pump on top of it; I pumped water and saw others pump out of it. I know if was in 1861, because it was the next spring after I came here and before I sold my livery stable. R. P. 577/1620/1879

George Hovey, aged 60 years, testifies: Have resided in Buchanan county, Iowa since 1855; I lived north and west of Independence, in Perry township, in 1861; I came to Independence in 1861 or 1862, to see the soldiers that were being enlisted here for the war. Elias Hovey, my brother, and John Ganier were with me, and I think some one else; we came along on the west side of the river, near the north-west corner of Block 3, Stoughton & McClure's 2nd Addition to Independence, and saw a pump on top of a pipe; it appeared to be an iron tube driven into the ground. Elias, my brother, and the rest got out of the wagon and examined it; I did not get out of the wagon; they pumped water and drank out of it; I did not pump. It was stated that the well was made by driving that tube into the ground and pumping water from it; it looked as though it was made in that way; it was before my son, Nelson Hovey went away to the war. I am not positive that it was in 1861; it was either 1861 or 1862; I think it was the first year of the war.

Mr. Hovey was recalled on another point later, and testified as to this well: Since I was on the stand before I have examined the Adjutant General's report, and find that my son, Nelson Hovey went out in Captain Hoard's company, C, Ninth Iowa Infantry, and that the company went away in August, 1861, so I am now positive that I saw that well in 1861. R.P. 1700

John A. Davis testifies; aged 38 years. I resided in Buchanan county and am farming. I have been sheriff of this county three terms, and city marshal of the city. In 1861 I enlisted in Captain Lee's company, afterwards E, of the Fifth Iowa Infantry. I came to Independence the 4th of July, to the celebration; I saw this iron pump on the tube that day. [Describes location and appearances as others.] I went home and William Coddling and I came down here on the 5th of July, 1861, and enlisted, after I enlisted we drilled here something over a week, and we had our drill ground on the west side of the river, sometines on the block where Z. Stout's house now is, and sometimes west of the Empire House. In going to the drill, and returning from it, we passed by this well; we always stopped and pumped and drank; it was good water and plenty of it. This well was there when our company left Independence for the war; we left about the 10th or 12th of July, 1861. I know it was July 1861 that I saw this well. R.P. 1705

A. I. Francis testifies; aged 52 years. I reside about four miles north of east of Independence; I am a farmer; I lived in Hazleton township in 1861; I enlisted in Captain D. S. Lee's company, afterwards E. Fifth Iowa Infantry; we left here in July, some time about the middle; while we were drilling here before going to the war, I saw this well on the west side of the river; when we drilled on that side of the river we went by the well; it was south of Main street and west of where the Presbyterian Church now stands; I pumped water there and saw others pump water; we drank there when out drilling; I know that it was in 1861 that I saw this well, and before Captain Lee's company left Independence for the war. R.P. 1718.

B. C. Hale testifies: Aged 56 years; I reside at Quasqueton.

Iowa; am a farmer; I used to live at Littleton on this county; in 1860 I was elected sheriff of this county; while I was sheriff here I know there was a well that was said to be made by driving an iron tube into the ground and putting a pump on the top of same; I saw the well; it was a tube sticking up out of the ground about eighteen inches, and an iron pump on top of the same; I saw that well; I pumped water out of it; I saw others pump out of it; the ground was wet around it, and puddles of water stood on the lower side of the pump; I know it was here in 1861, because I was then Sheriff of this county, and it was when Captain Lee's company went into, the service; I went into the service in August, 1862, in Company C. Twenty-seventh Iowa Infantry; I returned from the army in 1865. R. P. 1864/67/71/1730

E. S. Hovey, aged 57 years, testifies as to this well Int'g 34, and following that: I lived in Perry township, Buchanan county, Iowa; I saw a well in Independence, Iowa, on the south side of Main street and west of the river; I saw this well twice I came down here with two or three others in a wagon; we came along there and saw this pump; I got out of the wagon, pumped water and drank it; the others did the same; the next time I saw this well I came down here to church; I heard that Elder Fulton was to address the soldiers in the afternoon; I stayed to hear his address; I met a soldier who had enlisted in the company, named Furcht, Jule we used to call him; he asked me to smoke a cigar with him; he said I might never see him again; so after we had smoked our cigars he said he wished he knew where to get a drink of good water; I told him we would go over the river to this new iron well; we went over there and got a drink; we pumped water out of this well; this soldier Jule, or I presume his name was Julius Furcht, went into the Fifth Iowa Infantry regiment; I do not know what company he was in; it was the first company that was raised here for the war; my brother had a son go in the second company that was raised here; the second company went out of here in August or September, 1861, and I saw this well some two or three months before that.

On cross-examination the witness says that this Julius Furcht went out in the second company that was raised in Independence, in the Ninth Iowa; that on seeing the Adjutant General's report he finds that he went in the Ninth, and went away in August, 1861, and that he fixes the date that he saw this well as being the year that Furcht, his brother's son and E. C. Little went to the war. R. P. 1895

Josiah Brace, aged 64 years, testifies: I lived in the little brick house on Block 22, Stoughton & McClure's 2nd Addition to Independence, Iowa; I moved into that house in the spring of 1861; W. H. Joslin did not live there that year; I saw this well there; it was a tube sticking up out of the ground with an iron pitcher pump on top of it; I got water there some; I saw others get water there; I remember seeing the soldiers of Captain Lee's company get water there; I saw the soldiers from a company that came up from Vinton get water there; I saw the soldiers of Captain Hoard's company get water there; I know it was in 1861 that these men went into the war, and this well was there that season; I lived in the little brick house across the road from that well in the summer of 1861; I have not lived there since that time; the well was there while I lived in that house. R. P. 1815

A. H. Fonda, aged 55 years, testifies: I have lived in Independence, Iowa, since 1852; I live on the west side of the river; in the spring of 1861 I saw a well on the north-west corner of the block where the Presbyterian Church now stands; it was an iron tube and an iron pump on top of it; it appeared to have been made by driving a tube into the ground and attaching a pump to the top of it and pumping water from it; it was reported at the time that it it was made in that way; I know it was in 1861 that I saw this well; it could not have been in 1862; I am positive it was 1861. R. P. 1486

S. W. Fenstermaker, aged 55 years, testifies: I came to Iowa in 1860, and lived in Barclay township, Blackhawk county, Iowa; in the summer of 1861 I went to Independence to a circus; I saw a well there made by driving a pipe into the ground and putting a pump on top of the same; I pumped

water out of it; I saw others pump; there was a great many people there that day; I saw a great number use that well to get water; I went into the army in 1862 and came back in 1866; I know it was in 1861 that I saw this well. R.P. 1489

Martin Rust, aged 36 years, testifies: I resided in Perry township, Buchanan county, Iowa, in 1861; I went to Independence, Iowa, to a circus that season; I saw S. W. Fenstermaker at Independence that day; seeing him there attracted my attention at the time, as Mr. Fenstermaker was a deacon of a church, and yet he would go to circuses; I saw an iron well at Independence on the west side of the river; it was an iron pump attached to an iron tube; they told me the tube was driven into the ground; the grass around it was not disturbed but a very little; I remember it was in 1861, because we had a wide awake party that evening to raise volunteers for Captain Lee's company; I wanted to go, but did not; I afterwards enlisted in Company B. Fourth Iowa Cavalry; that regiment rendezvoused at Mt. Pleasant, Iowa; Peters was captain of the company at that time. R.P. 1688

C. B. Kandy, aged 50 years, testifies: I came to Independence in 1859, and I clerked for R. R. Plane in 1860 and in the fall of 1861 I went into trade with H. Wilson, on the west side of the river at Independence, Iowa; in 1862 I went out as sutler of the Twenty-seventh Iowa Infantry regiment; James I. Gilbert as colonel.

While I was clerking for Plane and before I went into trade with Wilson in the fall of 1861, I saw a well on the west side of the river; west of where the Presbyterian Church now is, that they said was made by driving an iron tube into the ground and attaching a pump to it; it was an iron pump; I pumped water out of it and others pumped; it was used a great deal; I think this well was there in 1860; it may have been in the spring of 1861; I am not sure, but my best recollection is, it was 1860; it was before I went into trade on the west side of the river with H. Wilson; I am sure of that. R.P. 1782

W. H. H. Morse, aged 39 years, testifies: I reside at Independence, Iowa, and have resided here since 1853; I first saw

an iron well made by driving a tube into the ground in 1860 or 1861; it was on the west side of the river; west of where the Presbyterian Church now is; I knew of a cricket club here in 1859, 1860 and 1861; I belonged to that club; I saw this tube well when we played cricket; we played on the ground where Z. Stout now lives.

I know of Captain Lee recruiting a company here; it was in 1861; I belonged to the band, and when the company left here we went with them to Burlington, Iowa; I did see this well before the company that Captain Lee raised went to Burlington in 1861. I am one of the defendants, and am interested in the event of this suit. RP 1786

M. B. Tims, aged 50 years, testifies: I have lived in Independence, Iowa, since 1854; am a carpenter by trade; clerk now in a lumber office; I saw a well on the west side of the river at Independence, Iowa, that I was told was made by driving an iron tube into the ground and an iron pump attached to it.

I saw this well; I pumped water at it and saw others pump; it was there several days; it might not have been there over a month; it might have been there a year; I knew of Captain Lee raising a company here in 1861; this well was here, I think, in 1861; I have no memorandum to be certain about. RP 1788

E. Ross sworn, aged 51 years, testifies: I came to Independence, Iowa, in the spring of 1857, and have resided here ever since; I know Block 3 in Stoughton & McClure's 2nd Addition to Independence; when I first knew it there were no buildings on the block; I built the first house on that block in 1861, on the south-east corner of th .t block, and moved into it as soon as it was done; before I moved in the house I lived in a house belonging to Isaac Whittier, right opposite the west end of Independence street, west of Stoughton & McClure's 2nd Addition to Independence, Iowa; while I lived in this house I was writing in the Court House, and I used to go across Block 3 in going to and from the Court House; I remember seeing a pump on the north-west corner of said Block 3, that summer of 1861; it was an iron pump on top of an iron

the tube was said to have been driven into
when the first company was raised here to
I saw that well; that is my recollection.

ed 49 years, testifies: Have resided in Bu-
enty-nine years; am a farmer; during the
in the Sixth Iowa Cavalry, Co. G; before I
I saw on the west side of the river, west of
terian Church now stands, a well made by
e into the ground and attaching a pump to

east and north of the house where Z. Stout
south side of Main street; I saw the well
er out of it; I saw this well on the 4th of
r 1862; I went into the army in the fall of
I went into the army; the well was some
a little north of where Z. Stout's house now

1723

ms, aged 33 years, testifies that in November
. F. Williams, and the family, moved from
wa, to Michigan, and lived there until 1867,
back to Independence, Iowa. R.P. 1673

, aged 44 years, testifies to playing cricket
where Z. Stout now lives; he was a member
rganized in 1858 and disbanded in 1861,
, A. B. Lewis, W. S. Marshall, T. Blondin
into the army in Captain D. S. Lee's com-
Company E Fifth Iowa Infantry; no cricket
hat company left here. He went into a band
1, and returned in August, 1862. R.P. 1677

aged 40 years, testifies: I know there was a
dependence, Iowa, in 1860 and 1861; I saw
many times; I enlisted in Captain D. S.
hich was Company E. Fifth Iowa Infantry;
ugust or September, 1861; I did not again
, Iowa, until in the fall of 1864. R.P. 1863
Parker, aged 60 years, testifies that in 1861
and family, and her son in law, E. P. Baker,

lived on a farm about three miles east of north of Independence, Iowa, known as the Reeves farm; that on the 4th day of July, 1861, they came to Independence, Iowa, to the celebration; that her husband told her about that well and how it was made, and she went with him to see it; locates it on or near the north west corner of Block 3, as the others do; says it was while they lived on that farm and before her son-in-law, E. P. Baker, went into the army; he went into the army in Twenty-seventh Iowa Infantry in 1862; enlisted in August, 1862; they moved off of this farm in November, 1861; it was while they lived on this Reeves farm, and was on the 4th of July that she saw this well. R. P. 1598.

J. H. Blakely, 41 years of age; Came to Iowa in 1855; was here then until March, 1862; then went to Wisconsin, and in July or August, 1862, enlisted and went to the war; came back to Iowa in 1866, and has lived here since; was deputy sheriff of this county four years; farmed it the rest of the time; on July 4, 1861 I went to Orlando Cobb's, and Oscar G. Luckey was at work there; Luckey and I came to town together, and we saw this tube well, located south of Main street, near north-west corner of the block, where the Presbyterian Church now stands.

I know it was in 1861, because it was the last 4th of July before I went back to Wisconsin, and it was while Oscar Luckey worked for Orlando Cobb; that same summer Luckey bought a pair of sucking colts of O. Cobb; took them on his wages; I bought the colts of Luckey and took them from Cobb's; Luckey was my cousin; Mrs. Cobb is my aunt; Luckey is now dead; Cobb lives now where he did then, about three-fourths of a mile south of Main street, Independence, a little west of south from this well. R. P. 1594

Orlando Cobb, aged 66 years: I have lived in this county about 28 years, and have been farming all that time; in 1861 I saw a well that consisted of an iron tube sticking up out of the ground, and an iron pump on top of the same; I saw this between the 1st and 4th days of July, 1861; I had Oscar Luckey at work for me that year; I have a memorandum in

my account book, which is as follows: "March 19, 1861, hired Oscar Luckey for eight months at 12½ dollars per month;" I made that myself on the 19th day of March, 1861.

I have other memoranda in the same book showing in regard to Luckey as follows: Lost time, April 18, 1 day; April 19, 3½ days; July 4, 1 day; also paid him July 4, 1861, $3." And "Sept. 23, 1861, sold 1 pair of sucking colts to Oscar Luckey, toward his summer's work, for $50." Also "December 14, 1861, paid Oscar Luckey $58,50, being in full of all demands."

I made all these entries myself at the dates stated. This book is all in my handwriting, and has been in my possession all the time since the year 1860. I first saw this well the same year that Oscar Luckey worked for me; I told Oscar about it; he went to town July 4, that year, and came home and talked with me about it; said he had seen the well. These sucking colts he sold to James H. Blakeley before they were taken away from here.

I pumped water at that well; saw others pump; Luckey said when he came home July 4, that he had seen the well and had pumped at it; I know it was 1861 that the well was there; Oscar Luckey did not work for me after 1861; there have been two other similar wells there since; one was by the oak tree when the Presbyterian Church was built.

Samuel Naylor, aged 45 years. I have resided in Buchanan county for about twenty-five years; I resided in Fairbank township in 1860 and 1861; in the fall and winter of 1860 and 1861 I worked for Samuel Sherwood in building an elevator at Illinois Central R. R. depot in Independence, Iowa; I boarded with Samuel Sherwood at his house on the west side of the river; I remember in the spring of 1861 I saw a pump on the south side of Main street, on the west side of the river; it was near the north-west corner of the block where the Presbyterian Church now stands; I pumped water at it and saw others pump; it appeared to be an iron pipe driven into the ground; it was stated at the time that this well was so made; I saw it several times; I know it was in the spring of 1861, for that is

the only time I boarded at Sherwood's house, and it was while I was boarding there that I saw this well. R. P. 1885

George Mann, aged 53 years: I came to Independence, Iowa, in 1859, and have lived here since then; I knew Carl. L. White, A. B. Lewis, W. S. Marshall; Tom Blondin, C. F. Herrick, and others, who used to play cricket ball on the block where Z. Stout now lives: when these men went into the war in 1861 there was no more cricket played, as I know,

I was up there one day watching them play cricket or this ball; I saw a pump there with an iron tube running down into the ground, and they were pumping water at it; they said the well was made by driving that tube into the ground and screwing the pump on to it.

I got to bantering about it and said I could pump it dry; I tried it; I pumped as hard as I could for about two hours; and I could not pump it dry; this was before J. R. Kays came here; Mr. Kays is a brother-in-law of mine; I knew him before he came here to Independence; this well was some two, three or four years before J. R. Kays came here.

This ball that they were playing at the time I saw them and when I tried to pump this well dry, was played by putting up thin sticks like lath, at each end of the grounds, and laying a stick across the top, and then bowling to knock those sticks off; the man has a wide bat and he tries to keep them from knocking down the sticks; I never saw this ball played here since the boys went off in Captain Lee's company. After Mr. Kays came here I did not tell him about this well; I saw another well at or near this same place, after Kays came here; then I saw another when they built the Presbyterian Church there; this last well was near the Presbyterian Church.

R. P. 1989 Leitner S. Stroman, aged 66 years: I came to Independence in 1859; in 1861 I saw a well on the west side of the river at Independence, Iowa; it was on the south side of Main street; it was first put in the street; Baxter Adams was road supervisor that year; he ordered the pump moved, and they moved it a little south-east of where it first stood; I knew Baxter Adams and knew he was road supervisor; his bond

here shown me is the bond he gave; this was 1861 that I saw this well; I was at work for Baxter Adams on the street that season, and I saw this well when he was road supervisor.

R.P. 1914 Edward Brewer, aged 65 years, says he was clerk of District Court, and clerk of Board of Supervisors in 1860 and 1861; identifies the bond as one given by Baxter Adams, dated and filed December 18, 1860; states that Baxter Adams, under that bond, would act until the fall of 1861; road district No. 1, Washington township, at that time embraced what is now the city of Independence, Iowa. R.P. 1581

B. W. Ogden, aged 57 years: Have lived in Buchanan county since 1855; in 1861 I lived about four miles south-east of Independence; I had a man at work for me, named Martin Hallock; he enlisted in Company E. Fifth Iowa Infantry, Captain Lee's company; when the company went to drill I used to go and see them; I saw a pump on west side of the river, west of where the Presbyterian Church now is; it was all a common there then; I saw this pump when I went over to see the company train; it appeared to be a tube driven into the ground and a pump attached to the top; one of my children died of typhoid fever June 28, 1861; my children were all alive when Hallock worked for me; this man, Martin Hallock, shown in the roster of Company E. Fifth Iowa Infantry, is the same man; I know it was in 1861 that I saw this well. R.P. 1991

J. M. Westfall, aged 57 years: Have lived in this county since 1853; I was sheriff of this county in 1862: in 1860 and 1861 I was working at my trade, carpenter and joiner; I knew of a cricket club in Independence, Iowa, in 1860 and 1861; C. L. White, O. H. P. Roszell, C. F. Herrick, A. B. Lewis, W. S. Marshall, Tom Blondin and myself were members of that club; several others, whose names I do not now know, were members; we played on the block where Z. Stout now lives, Block 4, Stoughton & McClure's 2nd Addition to Independence, Iowa; I saw a well there while we played cricket, a tube driven into the ground and a pump attached; it was used to get water to drink, and also the cricket club got water there; this club was broken up

by the war; a large number of the boys went into the army, and that broke up the club; they went in Captain Lee's company, Fifth Regiment Iowa Infantry; no cricket was played on that ground after Lee's company went away; this well was there when they played cricket in 1861. R. P. 1575

Anton Hageman, aged 47 years: Have resided in Independence, Iowa, twenty-eight years; in 1862 I sold Mrs. M. A Jordan a house and half of two lots. Identifies deed shown him as copy of deed given Mrs. Jordan, dated September, 1862 she lived at that time on west side of river, north of Main street; Jacob Rich, then editor of the *Guardian*, now pension agent, acted for Mrs. Jordan in purchasing the lots of me; before I sold these lots to Mrs. Jordan I saw a well on the west side of the river at Independence, Iowa, made by driving an iron pipe in the ground; I saw them driving on the pipe; I went away and came back after a while, and there was a pump on the pipe, and they were pumping water; this well was put in before I sold to Mrs. Jordan; they were playing ball on the grounds where Stout's house now stands at the time; they had some sticks stuck up like lath and rolled a ball on the ground and a man stood there with a bat and tried to keep them from knocking the sticks down; right after I sold to Mrs. Jordan I moved to Ohio, and lived there until June, 1863; John Fargo and H. S Cole might have been looking on at that time, but they were not helping put in this well; the men who put in this well stopped at a house now know as the Merchant's Hotel; Sherwood or Kimball kept it then.

This well was west of where the Presbyterian Church now is; the church was not there then; the land was all a common, the streets were not worked except Main street, so I could not locate it exactly. R. P. 1581

J. W. Foreman, aged 36 years: Is County Recorder; has been since January 3, 1881; produces copy of deed, A. Hageman and wife to Margret A. Jordan, dated September 16, 1862, recorded B 16, on page 561, conveys north half Lots 5 and 6, Block 9, Stoughton and McClure's Addition to Independence, Iowa; swears it is a true copy of the record.

Jacob Rich, aged 48 years: I published Buchanan County *Guardian* at Independence, Iowa; commencing in 1858, and ending in 1864 or 1865; I purchased of A. Hageman for Mrs. Jordan a house and lot on Walnut street in Independence; Alex. Smith lives south of this lot and John McGrady lives north of it; this lot is east of the river.

We lived on west side of the river; at the time I purchased this lot for her I boarded with Mrs. Jordan; I saw a well made by driving an iron tube into the ground and attaching a pump to the top of it. It was on the south side of Main street, west part of block where the Presbyterian Church now stands; I talked about it at the time; it was while I edited the *Guardian* that I saw this well but I cannot place the year.

During the time I edited the paper at Independence, Iowa, from 1858 to 1864, the town was overrun with patent rights and patent right men, and we do not mention these things in the paper unless as an advertisement and for pay. I recollect seeing this well but cannot now tell whether I noticed it in the paper or not.

R.P. 1881

Mrs. Henrietta Sherwood and Mrs. Rachel Kimball testify as to hearing talk about this well, and about putting a well in the cellar of the White House just before Kimball moved out of the hotel, and that he moved out the last of April, 1861.

They corroborate their husbands as to the time of Mr. Kimball and Sherwood keeping the hotel and when Mr. Kimball went out, and that Jed Lake and wife boarded there, and it was the same winter they (Lake and wife) were married. Lake's marriage certificate shows that they were married January 1, 1861.

R.P. 1787

E. W. Purdy, aged 50 years, testifies after stating in regard to wells put in by him in 1849 and 1850, at Milwaukee, Wis., says I saw this well on the west side of the river, south of Main street, and describes it location and appearance as the others do.

R.P. 322

Jed Lake, aged 50 years, called by the complainants and examined as to having seen notices in the papers as to this 1861 well, testifies, on cross examination, as to seeing the well

there the last of April or first of May, 1861, and as to its staying there until in July, 1861; after that he did not see it as he was not on that side of the river that season after about July or August, 1861.

Now we wish to recipitulate these names and give the evidence by which they fix the date of its existence. Those who saw the well during the process of its construction and knew of it at that time, are:

Thos. Sherwood, C. T. Kimball, Henrietta Sherwood, Rachel Kimball knew that it was put down just as Kimball and Sherwood dissolved partnership in keeping hotel, the White House, now Merchant's Hotel.

Dr. George Warne, T. H. Tyson, J. E. Trexler, J. H. Campbell, S. S. Allen knew about it as in 1861 from the cricket club, the building of Ross' house and Captain Lee's company being raised. A. F. Williams sold his corn in the spring of 1861, and was hauling it by there; went to Michigan in fall of 1861 and stayed until 1867. Corroborated by George A. Williams his son.

S. P. McEwen was building a house for Lyman Nethaway; had to go by there to work, and it was the next spring after Jed Lake was married, and the season that Lee's company was raised. A. Hageman saw them driving the tube before he sold his house to Mrs. Jordan, before he went to Ohio, and while they were playing cricket on that ground, west of this where Z. Stout's house now stands.

Thirteen witnesses, ten who saw it made, and three corroborate them as to the time it must have been made.

Those who saw the well and used it, and saw it used, and who are able to give a reason for the date, are:

Frank Trask, S. M. Marquette, Oliver Marquette, Perry Munson, T. J. Marinus, J. J. Travis, H. A. King, Geo. Hovey, John A. Davis, A. I. Francis, B. C. Hale, E. S. Hovey, Josiah Brace, A. H. Fonda, S. W. Fenstermaker, Martin Rust, C. B. Kandy, W. H. H. Morse, M. B. Tims, E. Ross, J. M. King, Mrs. Emeline Parker, J. H. Blakeley, Orlando Cobb, Samuel Naylor, George Mann, L. S. Stroman, B. W. Ogden, J. M.

Westfall, Jed Lake. Thirty in all, added to the ten who saw it made, makes forty witnesses who swear to this well, and give their reasons for its being there in 1861.

Then there are the others who saw the well but are not positive as to the year.

These are corroborated by the deed from Brown and wife to Deering. The Cummings heirs to Ross; the mortgage —Sherwood to Trask; the receipt—Kimball to Sherwood; the order of Tweeddle to pay Sherwood & Kimball; the account of Orlando Cobb with Oscar G. Luckey, and the certificate of marriage--Jed Lake to Sarah E. Meyer. These are records that cannot lie as to the date of the various transactions. These we supplement with the report of the Adjutant General as to the time that Captain Lee,s ocmpany, E. Fifth Iowa Infantry; Captain Hoard's company, C. Ninth Iowa Infantry; Captain Peters' company, B. Fourth Iowa Cavalry, left Independence, Iowa, for rendezvous, and that report says that these companies left in July, August and November, 1861.

This makes an array of witnesses and of documentary evidence that it has not been our fortune to find in any of the reported cases. These are men and women of the highest standing in the community. There has been no attempt to impeach them, and scarcely an attempt to contradict them. Ten of these swear positively to seeing the person who made this well actually drive the tube into the ground. The process is so simple that they could not be mistaken as to how it was done. There can be no claim that it was a complicated device and they might be mistaken as to the way the process was used. It would be absurd to claim that they were mistaken in that respect.

The Court can come to but one of two conclusions. Either this well was put down as stated by them in the spring of 1861, or here is a whole community of over forty persons, only three of whom have any interest in these suits, that come forward and willfully perjure themselves.

Strange to say, further, these same witnesses bring forward records, papers and public reports and private documents

that corroborate and sustain them as to the date in every instance. It is one of those cases where the Court will find it impossible to say that these witnesses are simply mistaken as to the time it occured.

We have left no such loop-hole. Only one conclusion can be come to, adverse to the fact that this well was there in the spring of 1861, and that is that these persons, who have no interest in these suits, who never had a driven well in any shape, and are we not parties or in an way related to the parties, come upon the stand and in the most deliberate manner swear to what is false.

And then the records come in and say that as to all the surrounding circumstances they tell the truth. If this well was made as the ten say it was, and appeared as the thirty others say it did, and furnished a good supply of water and was used by a large number of persons and for a long time, as all swear to, then it was an anticipation of the invention claimed by N. W. Green. This well existed as early as May 1, 1861. Green, Mudge, Smith, and all others who knew Green, says his first intimation of making this kind of a well was not earlier than September or October, 1861. Green's assignees cannot claim earlier than that. Our proof all shows that this well was there as early as the 4th day of July, 1861; and those who saw it made fix it at April or May, 1861.

Our witnesses who saw the well in 1861 and 1866, are: Dr. George Warne, S. S. Allen, S. P. McEwen, S. M. Marquette, A. H. Fonda, T. H. Tyson, Orlando Cobb, C. T. Kimball, T. Sherwood. Some of these men also saw the well put down by Hovey, when the Presbyterian Church was built there in 1868. So if complainants have not proved a well put down near same place in 1866, we have.

We have proved by testimony that has no doubts or equivocations in its nature, a well in 1861, another in 1866, and another in 1868, all on this same block, and the wells in 1861 and 1866 close together, say within two to six rods of the same place; while the 1868 well was within six rods of the east line of the block.

We have shown these three wells so strongly that no one, we think, can gainsay their existence. We have in addition to that shown by S. M. Marquette. D. S. Deering, S. P. McEwen and C. T. Kimball, that in 1862 there was another well there. Either the 1861 well was left over winter, or replaced in the spring, or another well was put down there that spring.

Mr. McEwen was not positive as to whether it was 1862 or 1863. Mr. Deering is positive it was 1862, and Marquette, who fixes the first well in 1860 or 1861, says it was the next spring after the first well.

But our 1861 well remained there from May 1st until fall. It was seen by a number on July 4, 1861. C. Brown, for complainants, swears that he took up this well, and put it down, either for a man north of Independence fifteen miles, or at Vinton, July 3, 1866. H. S. Cole, who worked with C. Brown, says it was taken up July 2 or 3, 1866, and taken to Vinton, and put down there by himself and Charles Brown; that he came back to Independence and was there on the 4th of July, 1866, and no well of that kind was there on the 4th of July, nor was any well put down here after that by those parties, and he never saw them or heard of their putting but one well on the common at Independence.

J. M. Chandler and J. B Turner corroborate these, that the well was left there but a few days and was then taken up, and not put down again so far as they know.

Our 1861 well was there July 4; the 1866 well was not there July 4, and could not have been seen by those who came to the celebration. Our 1861 well remained all summer; the 1866 well did not exceed two weeks. It will thus be seen that while the two wells were put down near the same place and looked alike, the one stood a long time; the other only a few days.

There is no proof that there was a show here while the 1866 well was standing; there is proof that there was a show here in 1861, while the other well was there. A show and a 4th of July celebration both occurred at Independence in 1861, and while this well was in operation.

Complainants' counsel in their arguments make great stress as to the discrepancies of the witnesses as to surrounding buildings and their uses. Let us take a reasonable view of that matter.

The most prominent building that has been testified about is the blacksmith shop testified to by J. R. Kays. Mr. Kays says he came to Independence, Iowa, in September, 1865, and opened that shop in January, 1866. He kept that shop there until 1874, and many of our people connected its existence with a date back of the time when it actually existed. Orlando Cobb, however says there was a blacksmith shop kept by Mr. Scott there in 1861. This, we think, is correct, although Mr. Scott was not called to the stand. Take the testimony of George Hovey. On cross-examination he says there was a blacksmith shop on that corner in 1861. But on re-direct says he had never been in the shop, had not seen it used as a shop and was not there that day. But some time after did get work done there, and so supposed the shop was there in 1861.

But take the testimony of those who were most intimately acquainted with the surroundings, and you will see that the shop was not there in 1861, kept by Kays: Dr. Geo. Warne, J. E. Trexler, J. Brace, S. S. Allen, O. Marquette, S. M. Marquente, T. H. Tyson, A. H. Fonda, George Mann. These all testify that this well was there before J. R. Kays came here.

Those who state that a blacksmith shop was there, still locate this well by circumstances about which they cannot be mistaken.

There can be no question that Captain D. S Lee raised his company, E. of the Fifth Iowa Infantry, at Iudependence in June or July, and left Independence for Burlington July 12, 1861. There is no question that Captain J. M. Hoard raised Company C. Ninth Iowa Infantry, and left Independence in August, 1861. Nor can there be a question that Captain John H. Peters raised his company, B. Fourth Iowa Cavalry, and left for rendezvous in November, 1861.

There is no question that Sherwood & Kimball kept the

White Hotel, beginning in October, 1860. and that Kimball left the hotel about May 1, 1861. The fact that E. Ross bought his lot in the south-east corner of Block 3 in 1861, cannot be questioned, or that he built his house that year. Brown sold to Deering the lot on north-east corner of Block 7 in the winter of 1862, and that Deering moved into his house that spring is not questioned.

That a cricket club was organized in 1858 and lasted until the spring of 1861, and that C. F. Herrick, C. L White, A. B. Lewis, W. S. Marshall, Tom Blondin, Jed Lake, W. H. H. Morse, J. M. Westfall, were members, cannot be doubted. That the cricket club did not play after Lee's company left in July 1861, cannot be gainsayed. That there was no crirket club at Independence after the disbanding of this club is fully proved.

That C. L. White, A. B. Lewis, W. S. Marshall, Tom Blondin, Richard Whait went out in Captain Lee's company, E. Fifth Iowa Infantry; and that Nelson Hovey, Julius Furcht and E. C. Little went in Hoard's company, C. Ninth Iowa Infantry; and that Martin Rust went in Captain Peter's company B. Fourth Iowa Cavalry, are all proved by the Adjutant General's report, and also by the evidence of a large number of witnesses.

That Jed Lake was married to Sarah E. Meyers, January 1, 1861, is fully proved by the records. That they boarded at the White House after January 1, until about the time this well was put down, and about the time that Kimball moved out, is fully proved and not questioned.

Now take all these circumstances and records, and take what these forty persons testify to and the records by which they fix these dates, and what, and who they saw at the well, and how they saw the well used, and your honors must find that so many men and women could not be mistaken.

Add to this array of testimony the evidence of J. R. Kays and George Mann. Mr. Kays testifies that he came here in October, 1865. and that his shop was built and occupied by him in January, 1866, and that Brown, West, Harrington and

others put in a drive well opposite that shop in the summer of 1866 or 1867. He says it was a curiosity and a great many people came to see it; that he did not hear of a well being there in 1861; that if one had been there in 1861 he would have been told about it; when asked who would have told him he names George Mann who is a relative of Mr. Kays.

The defendants call George Mann, who says he is a relative of Mr. Kays; knew him before he came to Iowa. That he saw this well in 1861; saw it when the cricket club was in existence, describes the way cricket was played by this club; tells how he tried to pump this well dry; pumped at it for about two hours; says it was before Kays came here, says he saw the well put down after Kays came here; near the same place, and that he did not tell Kays about the prior well. Mr. Mann gives a very straight narrative and fully proves the two wells, one in 1861, and one in 1866, and then tells us about the well when the church was built; this is proven to have been in 1868.

Such evidence as this, we again repeat, gives no chance to say that the witnesses are mistaken as to the date. These forty persons cannot all be mistaken.

Some stress has been laid on the fact that several say the blacksmith shop was there when they saw the well. You will find by carefully reading the testimony that but two are positive about that. Most of them do not remember; but give their opinion only; say that they are not positive.

But your honors will at once concede that there was nothing novel or startling in a blacksmith shop being at that place. Nothing about that to rivet the attention of a person. But in a well made as this one was, and having the appearance that this did, there is something to attract the attention. A person would remember the fact. They would know that they saw the thing. They would remember what it was and when. Twenty years after they might not remember when, so they would fix the time, not by a blacksmith shop, but by some other new and startling event.

These witnesses fix it by the beginning of the war of the Rebellion; the first companies that were raised to go to that war. The first company that was raised created the most excitement. It was a new thing to most of our citizens. They had not seen a military company before. War was also a new and startling thing to them. All these things fixed the well in their minds.

Perry Munson fixed the dates and circumstances because it was when the boys were playing cricket ball, The game was new to him. He asked C. E. Putney, Phil Bartle or C. F. Herrick, and they told him it was cricket ball.

C. F. Putney went out with Captain Lee's company in July, 1861. and was not in Independence again until 1864. C. F. Herrick went out in a band in August, 1861, and was not in Independence again until September, 1862, and did not play cricket on those grounds after Lee's company left; has never played there since that time, and does not think any one did.

Now your honors must acknowledge that we have surrounded this thing with all the testimony and records to convince any reasonable mind that this well actually existed at Independence, Iowa, in 1861. That Brown, et al., put in their well in 1866, and Hovey made a well in 1868, when the Presbyterian Church was built, is also proven by us.

Each of these wells we have proven beyond a question.

Your honors can, with much greater propriety, say that no well was there when the church was built, than you can deny the existence of the well in 1861.

We thus emphasize this 1861 well because of the strength of the testimony with which we supported it.

We also call the attention of the Court to the weakness of the complainant's testimony, as to this well, by those who lived at Independence in 1861.

Out of the two thousand inhabitants they called only five persons who lived at Independence at that time.

~~We also call the attention of the Court to the fact that at various times Mr. Rickel, Mr. West and Wm. D. Andrews~~

OTHER WELLS. R.P. 1599

J. J. Hunt of Napierville, Ill. says in his testimony that in 1848 Jacob Englefried made wells at that place by driving an iron rod into the ground, withdrawing the same, and then putting down a tin, wood or iron tube into the hole thus made. He describes the rod. Mr. Hunt made this rod for Englefried. He assisted him in making some of these wells. He knows of some now in use that were made by Englefreid in 1848. One was in the bottom of a well dug on the place of McRiddler, that is now in use and through which the water flows into McRiddler's well now.

He gives us another well, put in at a brewery owned by Mr. Stenger, which is still a flowing well. Mr. Hunt tells us that he himself in 1849 made a well on his own premises that worked satisfactorily until he drew the pipe and closed the well, because it was not where he wanted it. In all these wells the hole was made by driving a rod with a swell above the point, and withdrawing the same, then inserting a tube for the water to flow through.

We ask you to compare this method with the method described in the specifications to Green's original patent. You will see that these are the same methods precisely. In each case the hole was made by driving an iron rod, with a slight swell above the point, into the ground, until it was driven into the water-bearing stratum, then withdrawing the rod and inserting a tube in its place, through which the water flowed to the surface; or into which if necessary, a pump could be placed to draw the water up.

No one has contradicted, or questioned or varied this statement of J. J. Hunt. No evidence has been introduced by complainants to, in any manner, question this statement of Mr. Hunt's. This testimony was taken in February, 1880, and complainants took testimony until March 26th, 1881, yet never at any time offered to contradict this testimony. The evidence is conclusive. No attempt has been made to answer it.

Taking the case next in order, E. W. Purdy testified that R.P. 1787

in 1849 and 1850, in company with one A. J. Luckey, he made a number of wells at Milwaukee, Wis. These wells were made by forcing into the ground a rod of iron that had the lower end shaped like a bit, and was forced by raising and falling the rod by a lever and treadle, worked over a pulley set up on the end of a gin pole. This made a hole some three inches in diameter, and displaced the earth laterally. None was taken up out of the hole except when they struck quicksand. They then used a bucket with a valve in the bottom, until the quicksand was passed, when the rod was again used This hole was lined with a tube made in sections, and forced down as the rod displaced the earth. In some of these wells the water flowed up out of the top of the tube. In others a pump was used to draw the water up through the tube to the surface.

Now compare these wells with the first specifications of Green, as amended and attached to his original patent, and say if you can find wherein they differ. It cannot be found. No substantial difference exists between the wells made by E. W. Purdy and A. J. Luckey at Milwaukee, Wis. in 1849 and 1850, and the specifications to Green's original patent.

The hole is made by forcing down the rod and moving the earth laterally, and the tube is forced into this hole. The water sometimes flows out above the surface. In other cases a common pump is used to draw the water through this tube There has been no attempt to disprove, contradict or explain the testimony concerning these wells.

Then if you take the evidence of Byron Mudge, Ebenezer Mudge, Julius A. Graham and James C. Carmichael, as to how Mudge made wells in Cortland in 1861, you will see that they followed the same method that Purdy and Luckey did in Milwaukee in 1849 and 1850.

Purdy was examined in March, 1880, and more than a year elapsed before complainants closed their testimony. Purdy saw this well at Independence and has seen driven wells made. There is no difference in the manner of making the hole, in in its effect on the earth, or in its packing around

the tube, between his wells, made in 1849 and 1850, and the modern driven well.

This testimony shows a well that fully, clearly and explicitly anticipates the driven well, as Green claims to have invented and first patented it. These wells show that long before October, 1861—the time that Green swears he first explained the process of constructing such wells to his men in Cortland, N. Y.—that kind of well had been made and was well known to the public.

This testimony of E. W. Purdy is very clear and explicit, that in making the hole in the ground to insert the tube, the earth was moved laterally, and was not taken up out of the hole as in boring. He also testifies that the tube they put down filled the hole and was forced down as far as the rod was forced. That the earth was packed tightly about this tube, and that sometimes the water flowed over the top of the tube. That at other times they drew the water through and from this tube by a well known form of pump. This tube formed the casing or lining of the well in the wells made by Mr. Purdy. It formed no more than that in the original patent of Nelson W. Green, No. 73,425, dated January 14, 1868.

THE TALLMAN WELL.

We take up next in order the well known as the Tallman well, made at Preble, in Cortland county, N. Y. in September, 1859, and used for two or three years to water W. E. Tallman's stock. As there is no contest over the general features of this well we will state them in a general way, without referring to the testimony of any particular individual.

William E. Tallman owned a farm in the valley of the Tioughneoga river, about a mile south of Preble village, of about two hundred and forty acres. On the east part of this farm was the river, and across the river a dam and a grist mill and a saw mill built near the dam, all owned by Tallman. A road from Preble village on the east bank of the river leads to Homer, known as the East road. A road on the west end of the farm and about a mile west of the East road, leads from Preble through Little York, to Homer is known as the West

road. About half way between these, where it crosses the farm, is the track of the Syracuse and Binghamton railroad, now called the Delaware Lackawanna and Western.

On the south line of William E. Tallman's farm is a cross road connecting the East and Westroads. This is about a mile in length. Just south of this road is the farm of Moses T. Tallman, a brother of William E. In 1859 these two brothers lived here on their respective places. William E Tallman kept a dairy of cows and pastured them west of the railroad. These pastures, three in number, were destitute of surface water, and wells before dug had not supplied water for the cows. So in the spring of 1859 William E. Tallman set Thomas Jefferson Getman to dig another well for him.

They went into a little ravine or draw in the land, near where the three fiields come together, and about fifty or sixty rods north of the east and west road, and about the same distance east from the West road, and about one hundred rods west from the railroad, and there dug a well about ten or twelve feet deep and stoned it up.

This was in May, 1859. In July or August the well was dry. To this time Tallman had the water pumped by hand for the cattle. About this time he got a wind-mill and a new kind of pump to pump water for his cattle. The wind-mill was erected over the well in August or September, 1859; the new pump was attached and it worked in that way for some three or four years.

This new pump consisted of a cylinder about eight or ten inches long and three to four in diameter; had the suction pipe enter it at the bottom and the discharge pipe come out at the side near the top, and was both a lifting and a force pump. This pump could not be used by hand. It could only be operated by the wind-mill. The hand pump was also left in the well, and was used when water was wanted for drinking purposes. Both pumps were in the well at the same time. All the above are uncontradicted. The witnesses on both sides testify alike to these facts. R.P. 1495 R.P. 1463

The testimony of George Way, Charles White and Dix

Hobart is that they saw the suction pipe heated, battered together and punched; that it was from five to seven feet long, with a screw thread cut on the top end of the pipe, and that this work was done by direction of William E. Tallman, in August or September, 1859. That he told them at that time that he was going to drive this pipe in the bottom of the dug well in the pasture, west of the railroad, and that the well was then dry. R.P. 1296 R.P. 1442

The testimony of Moses T. Tallman and Edwin Wilbur is that they saw this pipe and that it was prepared in its present shape, and that William E. Tallman told them he was going to drive it in the bottom of the dug well in the pasture. R.P. 1396 R.P. 1550

The testimony of DeWitt C. Callan and Elizabeth Short is that they saw Tallman and his man driving this pipe in the bottom of the dug well. R.P. 1296 R.P. 1307

The testimony of Moses T. Tallman and Abram A. VanDenburg is that the pipe was in the bottom of the dug well; that there was no water above the surface of the ground in the well; that the pipe appeared to have been driven into the ground; that only about eighteen to twenty-four inches of the pipe was above the surface of the ground in the bottom of the well, and that the pipe was firmly in the ground, with the earth packed tightly about the outer surface of the pipe.

The testimony of George Way, Charles White, Dix Hobert, Moses T. Tallman and Abram VanDenburg is that there was a screw thread cut on the upper end of the pipe, and that it was from five to seven feet long. The testimony of all these witnesses on the part of the defense, and of J. D. F. R.P. 134 Woolston and Robert Cowin, and the further testimony on the part of complainants of Eben Daly, James Rady, Mathias VanHoesen, J. L. Haviland, John VanDenburg, Thomas Ballard and Thomas J. Getman, is that this well was made, the pump put in and the wind-mill erected in 1859, and before the camp-meeting on the farm of Moses T. Tallman, which is proved to have been commenced about the 7th and ended about the 14th of September, 1859.

R.P. 134 The testimony of Moses T. Tallman, Abram H. VanDenburg, J. D. F. Woolston, Robert Cowin, DeWitt C. Callan, George Way and Edwin Wilbur, is that they were at the well at different times after the wind-mill was erected, and saw the wind-mill pumping water out of the well, and that the pump was situated down in the well, near the bottom, and that there was no water above the surface of the ground in the bottom of the well, and yet the pump was discharging a good stream of water from the pipe into the trough or reservoir.

R.P. 197 The testimony of Moses T. Tallman, DeWitt C. Callan and Thomas J. Getman is, that this well furnished water for the stock of William E. Tallman from September, 1859 until August, 1862, and that the water was pumped by this wind-mill through this new kind of pump, and that during that time it furnished an abundant supply of water for the stock.

Taking this pipe as it appears now before you, and taking the testimony of all the witnesses who saw the pipe before it was driven into the well, and who saw the well and the pump furnishing an abundance of water, when no water appeared above the surface of the ground in the well, and consider this testimony with the declarations made at the time by William E. Tallman to these various witnesses, as they have testified, and putting all these facts, circumstances and declarations together, your honors can come to no other conclusion than that this well was made by William E. Tallman, by driving this piece of gas pipe into the ground in the bot tom of that well from three and one-half to five and one-half feet.

These declarations were made by him at the time he was doing the work. He sent to the mill from the well and had Charles White cut a piece of hard wood scantling to drive upon. He borrowed of DeWitt C. Callan a mall to drive with. He was there with his men himself, down in the well, holding the gas-pipe with one hand and the scantling on the end of it with the other, and Thomas J. Getman, standing on the ground above, was driving on the scantling with the mall

borrowed of Callan, as seen by DeWitt C. Callan when he came after his mall, and by Elizabeth Short, when she took water to the men to drink.

Your honors will also see by the testimony that William E. Tallman, after this driven well litigation commenced, came from Syracuse to Preble and found this piece of tubing in his brother's possession, where he left it in 1864, and then claimed that he used it to drive down in the bottom of this well in 1859. He informed R. H. Duell, Moses T. Tallman, John D. F. Woolston and others, in 1877 or 1878, how this well was made, and showed them this section of gas-pipe that he used.

Moses T. Tallman tells you how it came to be so short as it now is. Unfortunately for us William E. Tallman died before his testimony was taken; so we have not that. But before he died he found this pipe and identified it. George Way saw the pipe and identified it as the one he punched some holes in for William E. Tallman in 1859. Thomas J. Getman identifies it as the one put in the Tallman well in September, 1859; so there is no question that this pipe was used at that well in September, 1859.

There is no question that it was in the bottom of the well under the pump. There is no question that this pump that the wind-mill operated was one that could not be operated by hand, and that it was placed down in the well some one and a half or two feet from the bottom. All these things are clearly and fully proven and no attempt is made to dispute them. R.P. 1307

We prove by Moses T. Tallman, Abram H. VanDenburg, George Way DeWitt C. Callan, Elizabeth Short, Robert Cowin, Edwin Wilbur, Dix Hobart and others, that there was no water above the surface of the ground in the bottom of this well at the time this gas-pipe was put in the well and for months after that.

We prove by Moses T. Tallman, George Way, Dix Hobart, Charles White and Edwin Wilbur that William E. Tallman said he wanted this pipe to drive in the bottom of the well, and they saw the pipe before it was driven.

It is proven by all these witnesses and others that this wind-mill was erected in 1859 and that it did pump water out of this well for several years to water stock.

Now, aside from those who helped at the well, and who fixed the pump and examined it especially, we find that William E. Tallman, when the question as to this driven well patent was first raised, came from Syracuse back to this farm of his, and finding this pipe, identified it, looked up data to show when he received the wind-mill and told all with whom he talked that he made the well by driving this pipe, which was from five to seven feet long, into the bottom of the dug well and that he attached a pump to it by a screw joint which was air tight.

We show by the above named, to-wit: Moses T. Tallman, Abram VanDenburg, George Way, DeWitt C. Callan, Elizabeth Short, Richard Egbertson, Dix Hobart, John D. F. Woolston, Robert Cowin and Edwin Wilbur that this pump drew water from the ground when no water was above the surface in the bottom of the well. So we say we have proved this beyond a reasonable doubt, and we say further that this line of proof has not been contradicted.

Now, taking all these facts that are not questioned and we have, A well, dry about August or September, 1859. The bottom is a coarse gravel stratum, with the water just at the surface of the ground in the bottom. This piece of tubing, with the point sharpened so it could be driven. The sides of the tube, up a foot from the end, punched with fifty-nine small holes, and the proprietor of the premises saying that he is going to drive this pipe into the bottom of the well, to get water in that way. (George Way, Moses T. Tallman, Chas. White, Edwin Wilbur and Dix Hobart.)

He is at the well with his men and holding a scantling on top of the pipe while a man is driving on top of the scantling. (DeWitt C. Callan and Elizabeth Short.)

The tube is in the well, sticking up above the bottom about two feet, and no water above the surface. The tube is firmly in the ground with the earth packed tightly about it,

and in this way the pump is attached. (Abram VanDenburg and Moses T. Tallman.)

With no water above the surface of the ground it pumps nicely and furnishes water for the stock. (Abram VanDenburg, DeWitt C. Callan, Dix Hobart, Edwin Wilbur, Moses T. Tallman and Robert Cowin.)

It is used to pump water, for a number of years, for the cattle of William E. Tallman, who made it. (DeWitt C. Callan, John D. F. Woolston, Moses T. Tallman, Edwin Wilbur and Thomas J. Getman.)

If this is not a prior use of the same principle that was afterwards patented by Nelson W. Green, what is it? None of the complainants' witnesses who testified ever went and examined this well. None of them were ever down in the well. None ever knew but what the pipe was driven in the bottom of that well.

We say, taking all human evidence, that a thing could not be proven with greater certainty than are these facts. The date at which it occurred is also fully established and not denied. It was at the time of the camp-meeting on Moses Tallman's farm. That was in September, 1859.

Now let us examine this case further. According to all the evidence the wind-mill was not erected until after the gas-pipe was put in the well. The gas-pipe was not connected with any other pump before it was attached to the wind-mill pump. This wind-mill pump was new. It had not been used and could not be used except by connection to the pitman of the wind-mill. Now here is a new pump, a new piece of gas-pipe and a new wind-mill to be put together for the purpose of drawing water from a well, where none is above the surface of the ground in the bottom of the well. No lead pipe is on the pump. It is one of peculiar construction. It is noticed by those who saw it. Mr Tallman has got his gas-pipe from Syracuse and has had a screw thread cut on one end, the other end heated and drawn to a point and holes punched in it a foot up the pipe.

All these things taken together, your honors must admit

that the evidence is strong indeed that the pipe was driven into the bottom of that well, so that the upper hole in the pipe, as you see it, was below the water line in the soil. If this pipe was five feet long then the pipe was driven three feet into the soil. If six feet, then it was driven four feet. Getman said it was driven three or four feet into the ground, He thought not over four feet.

There is so much proof that this well was dry, that the pump was down in the well and the pipe was tight in the ground, with no water above the surface in the bottom of the well, yet furnishing a sufficient amount of water to satisfy his stock, consisting of from twenty to sixty head, that we do not see how this court can fail to find that this was a genuine driven well. We have not time to go over all the evidence, but expect the court to give it a thorough and careful examination. And we believe that such careful examination will satisfy your honors that the well was an anticipation of the Green patent.

THE BUXTON WELL AT WARSAW, N. Y. R.P. 413

Timothy H. Buxton was examined January 1880. Says he is 64 years of age. Has resided in Warsaw, N. Y. 44 years. Has been engaged in the wagon and carriage making business in Warsaw 44 years. During that time had other business. Had an interest in a hardware store five years. Was sheriff of Wyoming county N. Y. six years. Chancey C. Buxton, his brother, was in the carriage business, in company with him, 24 years. Our shops are on Main street in the village of Warsaw. There is a mill race crossing our lot and running under one end of the shops. In 1858 we made a well near this mill race by taking a piece of gas-pipe and drilling a number of small holes in one end of it. Then I had a hard wood plug turned and put in one end of the pipe. This pipe was eight or ten feet long. I then took a crow-bar and made a hole in the ground as deep as I could with the bar. Then I took this pipe and put it in the hole and drove it down until I thought it was into the water. I then put a cistern pump on top of this pipe with a screw coupling joint and

pumped, and got water. The holes were drilled in the pipe by one H. E. Adams, who then worked for me, and the hard wood plug was turned by H. E. Adams and the screw thread on the top of the pipe was cut in our shops. The pipe was driven by laying a block of wood on top of the pipe and striking on top of that with a sledge hammer. The ground where this was driven was a loose, sand and gravel ground and down where the water was, was a loose, gravel ground. The plug was turned with a shoulder on it so that it would not drive up into the pipe, and was put into the end of the pipe to keep the dirt from filling the pipe as it was driven down. This well was made near the mill race, and just at the west end of the blacksmith shop. The well was used there for several years and then, when we wanted to lengthen out our shop, the well was taken up and the shop was lengthened. After the building was completed, the same pipe or another one like it was driven down inside the shop, and is there yet and used for getting water. Alanson Burr worked for me 35 years. He was a blacksmith and worked in the blacksmith shop at the time the first well was made. I am positive that this well was made in 1858. Our shops were on the west side of Main street; the blacksmith shop was west of the wagon and paint shop. I do not remember the year the extension was made to the blacksmith shop. I do not think there was a time between 1858 and 1867 that there was not a driven well on the premises.

RP 122

Chancey C. Buxton testified in March, 1880. I am 66 years of age and have resided in Warsaw, N. Y. 50 years. I was engaged in the wagon and carriage business for about 30 years in company with T. H. Buxton. In 1858 we had our shops on Main street, in Warsaw. H. E. Adams had a turning lathe in our shop. There was a mill race ran under the shop across the premises. In 1858 we made a well at the west end of the blacksmith shop by driving an iron pipe into the ground and attaching a pump to the top of it. This well was used there several years. I have myself obtained water at this well a number of times. I have seen others get water

there a great number of times. The water was let out of the race in the summer of 1858, and this well was used when the water was out of the race. They got water from this pipe by a pump, screwed on to the top of the pipe. The soil where this well was made was sand and gravel loam. It was loose gravel where the water was. When we lengthened our shop this well was taken up, and after the shop was done we put it down inside the shop and it is there now. RP 1170

Hiram E. Adams, called in February, 1880. Testified that he is 65 years old and resides in Warsaw, N. Y. I knew the firm of C & T. Buxton, when they were in business making wagons and carriages on Main street in Warsaw. I knew the land on which their shops were built before they bought it. I knew when they bought it, and knew when they built their shops there and have known it ever since. I moved into their shop in 1858. I had a turning lathe, a saw, planer, borer and tenoning machine. I did the work for C. & T. H. Buxton, getting out wagon stuff. I went in there in the spring of 1858, and in that summer I know of a well being put down on the premises. An iron pipe was brought into the shop for me to turn a plug and fit into the end of the the pipe. I turned the plug out of hard wood and fitted it into the end of the pipe. I then took the pipe and drilled a lot of holes along up the pipe about eight inches. They then took this pipe out west of the blacksmith shop, and took a long iron bar and made a hole as deep as they could with the bar, and then put this pipe down the hole, and then drove it down into the ground until it struck water; then they screwed a pump on to the top of the pipe and pumped and got water. There was a good deal of dirt and gravel come up with the water at first and after that the water got clearer. This pipe was driven down ten or twelve feet. It was used there all through the dry weather that summer. I used to get water there a good deal. It was used there several years, until the shop was enlarged, and in building the addition they took up the well. R.P. 1258

Jabez B. Warren called. I am 61 years of age and reside

at Attica, N. Y. I lived in Warsaw, N. Y. from April, 1860 until April, 1880. I was agent for the Buffalo, New York City and Erie Railroad, at Warsaw, N. Y. I have known C. & T. H. Buxton for about thirty-five years. They were in the wagon and carriage business at Warsaw, on Main street. In 1860 I had them repair a wagon for me. I saw a peculiar well at the west end of their blacksmith shop, at that time. It attracted my attention. It consisted of a cistern pump on the top of a gas-pipe that stuck up out of the ground 18 or 20 inches. I inquired how it was made and they replied that it was made by driving a tube into the ground. I saw them pump water from it. Hiram E. Adams and Chancey Buxton are the men who told me about it. There was no appearance of an excavation, and the pipe appeared to go perpendicularly into the ground. They were pumping water from it, and it seemed to yield an an abundance of water.

THE PUBLICATION OF DAVID LIVINGSTONE AS TO GETTING WATER IN SOUTH AFRICA. R.P. 1618

D. C. Backus examined, March 24, 1880. Testifies that he is 50 years of age, and has resided in Independence, Iowa for ten years, and before that resided in Cazenovia, N. Y. for forty years. That in 1858 his wife presented him a book known as *Livingstone's South Africa*, which shows to have been published by Harper Brothers, New York in 1858. On page 59 of this book is a description of the way Backalahari get water out of apparently dry sand beds, and is as follows:

"When they wish to draw water, the women come with "a lot of ostrich egg shells, with a hole in the end of each "that would admit one finger. They tie a bunch of grass on "the end of a reed, then dig a hole in the sand as deep as "they can with their arms. They put the end of the reed, "with the grass tied on, down in the hole and ram down the "wet sand firmly around the reed. Then, applying the "mouth to the upper end of the reed, they create a vacuum "in the grass and sand beneath, into which the water collects "and in a short time rises into the mouth. A straw is placed "in the mouth and guides the water into the hole in the egg

"shell. The whole stock of water is passed through the wo-
"man's mouth, as through a pump."

CITATION OF AUTHORITIES ON THE QUESTION OF PRIOR USE.

In the case of Bradford vs Hunt, 1 Mason, 302, decided in 1817 by Justice Story, the judge said: "I hold it to be the "true interpretation of the statute that any patent may be "defeated by showing that the thing secured by the patent "had been discovered and put in actual use prior to the dis-"covery by the patentee, however limited the use or knowl-"edge of the prior discovery may have been."

And in the case of Coffin vs Ogden, Whitman's P. C., 465, the court says: "Prior knowledge by a single person is sufficient; the number is immaterial," and cites the case of Bradford vs Hunt, and approves the interpretation of the law laid down by Justice Story in that case.

In the case of Miller & Morley vs Forley & Co., 9 F. R., 603, decided by Baxter, Circuit Judge in the district of Kentucky, December, 1881, in giving a history of the case the Judge says: "This case, as it was then presented, was heard "by me more than a year ago, when a decree was entered, "sustaining the first claim of the patent, adjudging defend-"ants guilty of infringement, granting an injunction and or-"dering an account of profits. But before the account was "taken I granted a rehearing, to enable defendants to put in "additional and newly-discovered evidence." This evidence shows that one Smith practiced the thing invented by complainants, in a very limited way, in a remote town in Arkansas, and that he only applied the process to a very few plugs of tobacco. The complainants in that case discussed the question thoroughly, that on account of the limited application of the process by Smith, his acts were merely experimental, and that therefore it was an abandoned experiment by him. The Judge, in reply to this argument, says: "I can-"not concur in this view of the facts. Smith discovered the

"process. This he seemed thoroughly to understand, and "having applied it successfully to one or two plugs, it requi- "red no inventive genius to apply it to others. It is not im- "portant that he did not do this. Ho did not have the ne- "cessary facilities nor the means with which to obtain them. " * * * He did not abandon it until he had fully "developed the process, and until it was understood by him- "self, Lee and Davidson, and this, we think, is enough, under "the authority of Goffin vs Ogden, 18 Wall, 120, to supercede "and overthrow complainant's patent."

In Collender vs Griffith, 10 Reporter, (Boston) 8, May 4 1880, Blatchford, C. J. says: "The evidence of Winant and "Moore is sufficient to show the prior existence of billiard "tables containing the combination covered by the complain- "ant's reissued patent."

In the case of New vs Lawrence, 11 Reporter, (Boston) 45, Benedict, D. J. This was a patent for an improvement in the construction of waterproof cellars, cisterns etc. and was claimed by the complainant to be a method for keeping water out. Proof was shown that before the patent, another pasty had made a cistern, and used substantiaily the same device to keep water *in*. The court held that the patent was broad enough to cover both, and then says: "Such a cistern, if made "since the patent, would have been a clear infringement upon "the patent as I have construed it. Having been made prior "to the plaintiff's invention, it must, of course, be held to "have anticipated it, and compels the decision that the pat- "ent is void for want of novelty."

In Reed vs Cutter, 1 Story, 590, it was held that prior knowledge by a single person was sufficient to defeat a patent. The number is immaterial.

In McNish, admx. vs Everson, Macrum & Co., 2 F. R. 899, July 20, 1880, McKeene, C. J. This invention was for a bottom for annealing boxes, having ribs or bars of wrought iron or other metal extending through them, the object being to give the boxes additional strength in the line of the strain upon them. Robert C. Totten testified that he made that

kind of a box for annealing carriages as early as 1866, and these were used by Everson, Preston & Co., for a time and then they ceased to use them. The complainants claimed that under the circumstances it must be regarded as an unsuccessful experiment. The Court in answer to this argument says: "The device used was complete in its construc-" tion, and it was used sufficiently to demonstrate its practibil-" ity. * * * It was clearly a complete and useful invention, " and the abandonment of its use by Everson, Preston & Co., " furnishes no warrant to the patentee to claim it as the first " inventor."

In the case of Olendorf, et al., vs. Eckler, F. R., 570, Blatchford, C. J., says: "The testimony satisfactorily estab-" lishes that the invention claimed in the plaintiffs' patent was " known to and used by Lewis Perkins before it was made by " the plaintiffs. The bill must, therefore, be dismissed with " costs."

In Blake vs. City of San Francisco, 5, S. C. R., 692, this Court says: "Whenever the public have acquired the right, " in any way, to use a machine or device, it has the right to " use it for all like purposes for which it can be applied; and " no one can take out a patent to cover the application of the " device to a similar purpose." Citing Penn. R. Co. vs Locomotion &c. Co., 110 U. S. 490 (4 S. C. R. 220)

We call the Court's attention to:

Brown vs. Piper, 91 U. S., 37,
Roberts vs. Ryer, 91 U. S., 150,
Sewall vs. Jones, 91 U. S., 171, on page 180,
Reckendorfer vs. Faber, 92 U. S., 347,
King vs. Glum, 3 S. C. R., 85,
Zone vs. Soffer, 3 S. C. R., 562,
Estey vs. Burdett, 2 S. C. R., 531,
Phillips vs. City of Detroit, 3 S. C. R., 580.
Mahan vs. Howard, 5 S. C., 174,
Miller vs. Force, 6 S. C. R., 204.

These cases show conclusively that the courts hold in every instance, where prior use is proved, that it is a successful and meritorious defence. They also hold that such use need be known by but a few persons. That the use need

not have been continued. But even though it is entirely abandoned, and for years immediately preceding the claimed invention no use is shown, and that though the thing used is not exactly like the thing patented, if it answers the same purpose and produces the same results, and is so near like the patented article that if made after the patent it would be an infringment, such use and knowledge, with all its imperfections, defects and hindrances, is nevertheless a good defense against the patent.

Now, in our case we have proved the making of the well at Independence in such a manner that complainants claim that any well now made in that manner is an infringment of their patent. Ten witnesses saw it made; forty saw it used, and the complainants have not put in a bit of evidence, save the one witness, John M. Fargo, to contradict this well.

We have proved the making of the wells at Napieryille, Ill., by Englefried, with precisely the same shaped rod as shown in Green's patent. No evidence has been brought, offered, or pretended that could be offered, by the complainants to contradict this well. (See testimony of J. J. Hunt.)

We have proved the making of the wells in Milwaukee, Wis., by E. W. Purdy and A. J. Lucky, by forcing an iron rod into the ground, moving the earth laterally, and forcing down into the hole thus made a tube, with the earth packed tightly around the tube, and water drawn from the well through this tube by a well known form of pump. No person has been called to the stand with the pretense that he could disprove the making of these wells.

As to the well put down at Preble, N. Y., by William E. Tallman, in 1859, we have shown by six witnesses how the pipe was prepared, and what Tallman said he was going to do with it. By two witnesses that he did drive it as he told the six he intended to, and by two that the pipe was in the bottom of the well fast in the ground, having apparently been driven or forced into the earth, with the earth packed tightly around it, and by ten that after the pump was attached and the windmill erected, this well furnished an abundance of

water when none was above the surface in the dug well.

The complainants have put on the stand a large number of witnesses, who testify that they saw the wind-mill from the roads and took notice of the wind-mill, because it was the first that ever had been erected in Preble valley. But none of them testifies that he ever examined the well, or was ever down into it to examine the pump and its attachments, or that he knows anything about it except the fact of seeing the wind-mill at a distance of from 50 to 60 rods. Nor does any one of these persons claim that he ever talked with William E. Tallman about this well. The only thing they do say is that they never heard that it was a driven well. They disclaim all knowledge about it, except as seen by passing along the road, while we have on our side the most positive and direct testimony of every person called to the stand, who had anything to do with its construction, or with preparing the pipe, or erecting the wind mill, or who afterwards went and examined the well, pump and its attachments, that the pipe was prepared to be driven; that it was driven in the bottom of this dug well, and that the pump furnished an abundance of water when the dug well was dry.

In regard to the Buxton well at Warsaw, N. Y., made by T. H. Buxton, in 1858, we prove by the man who had the well made, by the man who drilled the pipe and fitted it, by the brother, and by a spectator, the making and use of this well, in a manner that would now be called an infringement of this patent.

Then we have the printed description of how water is obtained in South Africa from an apparently dry bed of sand, which describes the tube with the earth packed around it, the screen, the vacuum and the pump—precisely as this patent was construed by Judge Benedict in the Carman case, by Judge Nelson in the Wright case, Judge Blatchford in the Cross case, and a majority of this Court in the Eames case.

Taking now the fact as proven, that in April or May, 1861, a well was put down in Independence, Iowa, in a manner that is a clear anticipation of Green's patent, the com-

plainants claim that it was an adandoned experiment. We wish you to examine our evidence carefully and see if that is the case.

This man made the well. He did not claim to have any doubts about the result. He told Kimball and Sherwood that he could and would make a well of that kind. He did make it in the presence of Kimball, Tyson, Trexler, Warne, Allen, Campbell, Williams, McEwen and Hageman.

He took it up, changed its location, and put it down again two or three times, S. S. Allen and L. S. Stroman say. With him it was not an experiment. It was a fixed thing.

The Courts of the United States have said: An abandoned use is not an abandoned experiment. Simply because the use of these wells cannot be immediately traced from that time does not prove it to have been an abandoned experiment. With the man who made this well there was no experiment. He had no doubts. His well succeeded the first time he tried it in Independence, Iowa.

The number of persons who knew of its use is not material. It is only necesseary that was actually put in operation and worked well. The number of persons who knew of it need not be great.

This well did furnish water to Captain Lee's company of soldiers; to Captain Hoard's company of soldiers; to the cricket club; to the people who came to the circus and menagerie; to those who attended the 4th of July celebration; to put out the fire when Brown's house caught fire; to all who chose to use it from curiosity or otherwise; to water horses, and it did this from May to October.

George Mann tried to pump it dry, but could not. He pumped at it for about two hours. It was no experiment. There is no proof that the use of that kind of well was abandoned. D. S. Deering, S. P. McEwen and O. Marquette say it was used in that same vicinity the next year, or a year after that. E. Ross says it was used there all that summer, and he thinks a part of the next summer. McEwen and Tyson swear that they have heard of that kind of well right along from that

time to the present. A. Butterfield knew of them being made in 1865, and himself commenced to make them in 1866, and made them for two years. This was not an abandoned use, even.

While we see from the evidence in these cases that these wells were made in Iowa right along from 1861 to the present time, we have not been able, nor have the complainants been able to trace the knowledge of this method of making wells to Nelson W. Green. They have not introduced a single newspaper slip or a bit of public print, emanating from Cortland, N. Y., giving to the world the knowledge that he had invented a well of this kind.

He himself testifies that he did not attempt to make a well of this kind until after 1871. He made no experiments and furnished no practical knowledge to the world. If, however, it be claimed that the experiments made by Byron Mudge were made at the order and suggestion of Green, and that the experiments made by Mudge were really Green's experiments, and if this court should hold that because Green first suggested the idea to Mudge, therefore Green was entitled to the benefits of all that Mudge's experiments developed, then the complainants must be bound by all that Mudge did, and especially by that which he did with the knowledge of Green.

With us it will make but little difference which way the court holds upon that question, only asking that if the court holds that Green is entitled to the benefits of Mudge's labor and experiments, he must be bound by what Mudge did in those experiments.

We do not wish at this time to enter into the discussion of the applicability of this position to the present case, but merely to state our position in regard to it, so that the court may understand, as we proceed, what our position is, if they hold that Green is entitled to the benefit of the labor and experiments made by Byron Mudge, then he must also be bound by the knowledge that was given to the public by Mudge in making those experiments.

ARGUMENT ON THE ABANDONMENT OF THIS INVENTION BY N. W. GREEN.

We wish now to take up and examine the testimony that has been introduced in this case, in regard to the well made on the fair ground at Cortland, N. Y., in October, 1861, by Byron Mudge, for Julius A. Graham. It has already been proven that Byron Mudge made the experiments that were made in order to test the practicability of this kind of a well. The first experiment was made by Byron Mudge, Herman F. Robinson and J. C. Carmichael on the premises owned and occupied by Nelson W. Green, a little north of Cortland village, on the road to Homer. R. P. 1850

Mr. Mudge testifies that some time in September Col. Green suggested to him that he should make some experiments to see whether a well could not be made by driving an iron rod into the ground to make a hole, and then putting a pipe down the hole and inserting a pump and pumping out water. Mudge, Robinson and Carmichael were directed by Col. Green to make such an experiment.

This first experiment was made on the premises owned by Col. Green, on the bank of a creek, and operated so that the parties were satisfied that a well could be made in that manner, that would supply an abundance of water for ordinary purposes. The only question that seems to have been left in doubt after that experiment, was the best method of making the hole in the ground down to the water bearing strata. R. P. 1851

Mr. Mudge testifies that after this he made an experiment on his own premises near the mill, another on the premises of Mr. Townley, another on the premises of Reed Peck, and then considered that he had the apparatus so complete that he could make a well on the fair ground for Mr. Julius A. Graham, that would furnish all the water that he needed to supply the regiment with rations.

The camp at that time consisted of over five hundred men and was rapidly increased to a full infantry regiment of one thousand men. Mr. Mudge made this well for Mr. Graham. The well was used by the regiment during the time it remained on the fair ground, and furnished an abundance of water for all the purposes of cooking, drinking, washing dishes and washing, that was needed during the six weeks to two months that the regiment remained there after the well was constructed.

The manner of making this well, as testified to by Mr. Mudge, is that he took an iron rod and jammed it down into the ground with his hands, working it around and making a hole larger than the bar, then inserting a sheet iron tubing into the hole around the bar and working that down as the hole progressed with the bar. When the hole was thus made, projecting into the water to a sufficient depth to supply the required amount, a piece of lead pipe was inserted into the tube and a pump attached to the upper end of the pipe, and in that way water was drawn from the well. R.P. 1863

Mr. Mudge says that Julius A. Graham employed him to put down this well, and paid him for the time and material used, and that Col. Nelson W. Green knew of this well and of its use. That he himself had heard Col. Green, at several different times, call the attention of different persons, not members of the regiment, to the well, and tell them how it was made and who made it. Mr. Mudge also testified that he told Col. Green that he was making experiments and that he should succeed in making a good well. He also states that he told Col. Green about the experiments that he made, and also notified him that he had the tools and material ready to take with him into the army.

Mr. Mudge attempts to point out the defects in this well that was used on the fair ground, and he says emphatically that the only defects in that well were that the rod was not driven the whole distance to the bottom, and that the pipe to which the pump was attached was not prepared at its lower end as subsequent experiments proved would adapt it to

different soils. In all other respects this was a perfect well.

Mr. Mudge further tells us that he made a well for H. W. Woodruff the same fall, and for Mr. Seymour, and that Col. Green was notified from time to time of the making of these wells. R.P. 1854

He further states that in 1862 he made a well for J. C. Pomeroy, and in making that well he used the same pipe and material that he had prepared to take into the army with Col. Green's regiment, and that this well he considered perfect in all respects. He also testifies that during 1862, 1863 and 1864, Colonel Green lived in Cortland village and that he (Mudge) put down a large number of wells in and about that village during that time, and also that James Suggett put in a large number of wells during that time. These wells were what are known as driven wells.

He testifies that Col. Green inquired of him from time to time how he was getting along with making these wells and that he informed him that the wells were successful.

He further testifies that as long as he knew Col. Green, the latter never at any time made a well or attempted to make one.

R.P. 1442

Ebenezer Mudge testifies that he is a brother of Byron Mudge, and that he heard of Byron Mudge, H. F. Robinson and J. C. Carmichael making an experiment to get water by some new process; that afterwards Byron Mudge, Albert Rollo and himself made an experiment on the premises near the mill, and then another experiment on the premises of Mr. Townley.

He says the rod or bar of iron was driven into the ground with a sledge; that this bar of iron made a hole about two inches in diameter; that inside of this hole was inserted a piece of common tin conductor, two inches in diameter, and inside of this was inserted a tin boat pump about eight or ten feet long, and that the boat pump was small enough to easily go inside this tin conductor, and water was pumped from the well by this boat pump.

Then he assisted Byron in making another experiment,

where they had to go deeper to get water, and in that experiment the hole was made by driving the rod with a sledge, inserting in the place a tin tube, and inside of that using a pump. This witness also saw the well on the fair ground after it was made, and that well had a tin tube with a pump inside of the tube.

J. C. Carmichal testifies that he was acting as Lieutenant Colonel of the regiment of which Green was Colonel, and assisted Mudge in making the first experiment near Green's house. This experiment was made by using an iron bar, and a scantling four by four inches, twelve feet long, with an arm at the top eight feet long, with a pulley in one end of the arm They run a half inch cord over the pulley, attached it to the crowbar, and pulled the crowbar up with the rope and let it fall; and by repeating that operation made a hole in the ground some four or five feet deep to water; by working the bar from side to side they enlarged this hole, and then inserted a tin boat or liquor pump, and pumped water. The hole in the ground was so much larger than the pump that the pump had to be held down in the hole when they operated the plunger.

Nelson Green was there a few minutes while they were making this experiment. The experiment was superintended by Byron Mudge, and Robinson and the witness (Carmichael) assisted him.

Byron Mudge prepared material to take with him into the army, for the purpose of making wells. The material that he prepared consisted of curbing to be put in the hole to keep the earth from falling into it and filling around the pipe, and the rod to drive and the pump to insert in the curbing.

This well was not like the driven wells made at the present time. These wells, as now made, consist of a single tube to which the pump is attached.

We now wish to call the court's attention to the general public use of these wells in Cortland, N. Y., commencing in the spring of 1862 and extending to the present time. And to the knowledge Col. Nelson W. Green had of the use of

these wells in Cortland, by the inhabitants thereof, from the spring of 1862 to March, 1866, the time of his making his first application for a patent. R.P. 1451

Take first the testimony of Dr. H. A. Bolles. He tells us that in the spring of 1863 he was having a house built on some lots in Cortland village; that he proposed to have another house built on an adjoining lot the same season. When the masons were ready to commence laying the cellar wall, he told them he would have a well dug near the line between the two lots, to supply water to be used by them in making mortar. One of the men told him that he could get a well much cheaper and quicker by having a tube driven into the ground and a pump attached to it; that Byron Mudge was making that kind of well. He also told him that Col. Green had Mudge make a well of that kind on the fair ground, when the regiment was in camp there in the fall of 1861. Doctor Bolles started out to find Mudge to have him make the well. Before he found Mudge, he met Col. Green on the street. The doctor stopped Green and inquired of him about the well on the fair ground and how it worked, and told him that he wanted a well of that kind made. Col. Green told Dr. Bolles that he did not make that kind of well, but referred him to Byron Mudge, who, Col. Green said, would make him a well of that kind. The doctor then hunted up Mudge, who came with some help and made the well for him. This was in April, 1863, and the well was used in the place where Mudge put it down for eight or ten years. This conversation, the court will see, was more than two years before Green applied for a patent. R.P. 1346

We next take the testimony of Henry W. Woodruff, who lived in Cortland long before 1861, and who knew of this well being put down on the fair ground, and who, in fixing over his house that fall, desired to have the same kind of a well at his place. He employed Byron Mudge to make one for him and Mudge undertook to make this well in the fall of 1861, but the regiment left Cortland and Mudge went with it, before the well was completed. When Mudge returned in the

spring of 1862, he went to work and finished this well for Mr. Woodruff. This well was made twenty-two feet deep, and was fourteen feet down to water. Mr. Woodruff conversed with Col. Green about this well a number of times, and Green claimed that he first suggested that way of making a well to Mudge. When the witness expressed doubts as to the success of the well or its permanency, Green always told him that Mudge would finally succeed, and would make a nice well, as the well on the fair ground worked nicely. After the well was completed in 1862, Green then told the witness that he was glad Mudge had succeeded, because it would be a good well, and he thought that was a good way to make a well.

This well was situated on the street leading from the business part of the village of Cortland to the place where Green lived, and in passing from his house to the village and back, Col. Green passed directly by the well. He was on intimate terms with Mr. Woodruff; was frequently in his shop and had a number of conversations with him about this well of Mr. Woodruff's in 1861 and 1862. R.P. 1362

Henry Bates, also a resident of Cortland, N. Y. testifies that in April, 1863 he had a driven well made by Byron Mudge on a lot that he then owned, about forty rods southeast from where Nelson W. Green then lived. That there were no houses between his house and Green's, and that the well was in plain sight from Green's and on the street leading from Green's house to the village, and Green talked with him about the well and told him that it would be a good one. Bates told Green that Byron Mudge made the well and how he made it. This well was put down as part of the contract for building the house, and in the contract the well is named as an artesian well. Green was there during the time the house was being built several times, and talked about the well at different times. Bates told Green that it was a driven well and that Mudge drove it.

This well was built on a public street, where a great many persons passed, and was shown to these persons and talk-

ed about by them, and was known by a large number of people in that vicinity as well as to Green. And Green stated to Bates that it was a nice way of making a well, and he would find that it would be a good and permanent well. R.P. 1981

William Winter says that he constructed wells in Cortland, and that in May or June, 1863 he assisted in repairing a well on the premises owned by the First National Bank in Cortland, and that Col. Nelson W. Green was present when he fixed this well; that he drove a rod into the ground and then withdrew it, and put a pipe into the hole and drove the pipe down until there was three or four feet of water in it. Green was present and saw the operation of making this well.

E. De Puy Mallory testifies that in the summer of 1863 James Suggett made a well in the street of Cortland village, at the edge of the sidewalk; the pipe was driven down with what was called a pile-driver. This well was made for the purpose of getting water to use at fires, and was very near the business centre of the village, and was where Green had to go by it to go to the post-office or to church, and was talked about a great deal at that time. The village then had about two thousand inhabitants. From 1863 up to the present time these wells have been made in the village of Cortland, both for private and public use. R.P. 1984

In 1862 James Suggett made a well on premises that are now owned by himself and Mr. Taylor, on Main street in the village of Cortland. This well was made by driving a bar of iron into the ground, withdrawing that and putting an iron pipe in its place and driving that down. That well is now in use and has been ever since it was made, and supplies an abundance of good water. There was no secrecy about the making of it. It was known to the public in Cortland, and Nelson W. Green lived there at that time.

There was another well made just before the one made on the premises that Taylor and I now own, that was made on the premises then owned by G. N. Copeland of this village, and was made by James Suggett, by driving a rod into the ground and withdrawing it, and then putting down a pipe in

its place. The well was also known to a great many persons in Cortland at the time. R.P. 2016

Lucien Dexter testifies that he lived in Cortland village, and in 1861, 1862 and 1863 kept a restaurant at the corner of Mill and Main streets; that this restaurant was in the business part of the village, and was frequented by Col. Green a great deal in 1862 and 1863. That in the fall of 1862 he had a driven well made in his restaurant. It was done by driving an iron bar into the ground and making a hole, and then putting into that hole a piece of gas-pipe and driving that down and attaching a pump to the top of it. That this well was in a corner of his main sitting room; was used by a great many persons, both to get water to drink and for the purposes of the restaurant. Col. Green must have seen the well and pump and seen it operated, for he was in there very frequently, and read the papers and chatted and talked about various matters, and there was a great deal of talk in this room about the well and how much Suggett would make out of the patent on the driven well, if he got one. This well was made by James Suggett. The pump was where it could be seen through the window by persons passing on the street. R.P. 2015

Levitt D. Garrison testifies that in 1862 his father bought a store on the east side of Main street in Cortland village, of S. A. Fairchild, and had a driven well made in the store. The pump set in the front room of the store, opposite a window in the south side of the store. Col. Green and his family bought goods at our store and knew of the well, as all the other customers knew of it. At one time Col. Green lived nearly opposite, across the street from this store. R.P. 2017

Artemus Reed testifies that he lived in Cortland village, and in 1863 he had James Suggett make a well for him on Tompkins street, which was made by driving an iron rod into the ground, withdrawing it and, putting a tube in its place, driving that down about three feet further than the rod was driven, then attaching a pump to the top of it. This well was about twenty feet deep and furnished an abundant supply of water for three or four years, when he sold the place.

No secrecy was employed or enjoined; the well was known to the public generally, and was in plain sight from the street. Mr. Reed saw Suggett make two wells for J. A. Schermerhorn in the fall of 1862, on Main street, in Cortalnd village, and there was no secrecy about making them, and there was a good deal of talk about them in the village at the time. And driven wells were generally talked about in the village at that time. R.P. 1375

Ira V. Hicks testifies that he lived in Cortland, N. Y. in 1861, 1862 and 1863. He was carrying on a blacksmith shop on North Church street in Cortland village. and that Byron Mudge, during those years, employed him to drill and point gas-pipes, and fix rods for driving to make driven wells; that he prepared these pipes by drilling four rows of holes in the sides, one-fourth inch in diameter, one and one-half inches apart, and two and one-half feet up the sides of the pipe; that he sometimes heated the end of the pipe and drew the sides together to a point, and sometimes made a plug to put into the end of the gas pipe; that he made a great many of these that were used by Mudge to make wells in and about Cortland; that in the spring of 1863 Mudge made a well for this witness on Mill street in Cortland village; that Mudge made this well by driving down an iron rod with a pile driver, and then withdrawing the rod and inserting in the place a tube prepared as above stated, and driving that down into the ground and attaching a pump to the top of it by a screw coupling, and pumping water from it. This well was about eighteen feet deep and was used for a number of years, and furnished an abundant supply of good water, and was known of and talked about by the people of Cortland to a great extent. This method of making wells was very common in Cortland in 1862, 1863, 1864 and 1865. Col. Nelson W. Green was living in Cortland during those years, was about the streets frequently, and must have known of their use. R.P. 1379

Julius A. Graham testifies that he lived in Cortland in in 1860, 1861 and 1862 and ever since, and that he employed Byron Mudge to make a well on the fair grouud, for the pur-

poses of furnishing water to be used in preparing rations for the soldiers that were in the camp, and that Nelson W. Green knew of this well; that this well was made in October, 1861, by driving an iron bar into the ground and forcing down into the hole thus made a sheet iron tube as the bar went down, until they reached a sufficient depth of water, and then they inserted inside of this tube a lead pipe with a pump attached, and pumped water in that way for the use of the mess house, cooking, washing and drinking purposes; and it was so used from the time it was made in October to the time the regiment left, in December, 1861. The witness thinks that Green suggested to him to have this well put down. This well was about eighteen feet deep. R.P. 1358

Isaac M. Seaman testifies that he lived in Cortland in 1861, 1862 and 1863; that in the fall of 1862 he had Byron Mudge make two driven wells for him, on the corner of Church and Mill streets, in the village of Cortland, by driving down a rod into the ground and then withdrawing the same, and inserting a tube in its place and driving it down, and attaching a pump to the top of it by a screw coupling; that these wells were made openly and publicly, and the rod was driven with a pile driver about twenty feet high. And Nelson W. Green was then living in Cortland village, and was around upon the streets conversing with the people, and must have known of the existence and use of this kind of well in Cortland at that time. These wells were abount twenty feet deep, and were good and productive wells, and furnished an abundance of water. R.P. 1388

George N. Copeland testifies that he lived in Cortland village in 1861, 1862 and 1863; that in the summer of 1862 he had James Suggett make a driven well for him on the premises he occupied as a grocery store, on Main street in Cortland village; that this well was made by driving an iron rod into the ground, withdrawing it and inserting in the hole a gas pipe, attaching a pump to the top by a screw coupling, and drawing water; that he had two or three other wells put down in the same manner by James Suggett, in and about Cortland,

in the years 1863 and 1864; that these wells varied in depth from fifteen to twenty-two feet; that he heard of Byron Mudge making this kind of well; that this kind of well was very generally used in Cortland in 1863 and 1864; that Nelson W. Green at that time lived in Cortland village, was around through the town, associated with the inhabitants, knew what was going on in the village, and must have known of the use of this kind of well at that time. RP 2073

James Suggett, examined November, 1880, testifies that he has resided in Cortland, N. Y. 29 years. Has made many wells; was engaged in digging wells in 1861; was employed by Byron Mudge to assist in making a well for H. W. Woodruff. That this was in the fall of 1861, while the 76th N. Y. regiment was in camp on the fair grounds at Cortland. That they forced an iron bar down into the ground and followed that with a sheet iron pipe. That Mudge proposed to force the rod and pipe down to water, then pump out some sand and gravel with a gravel-pump, and then put a lead pipe down inside the tube and attach a pump to the tube. They broke the rod at Woodruff's and did not make a well there that fall. Shortly afterwards and while the 76th N. Y. regiment was at the fair grounds, they did made a well for O. H. Seymour at Cortland. This well was made by forcing the rod down to water, and the sheet iron pipe outside it, and then putting in a lead pipe and attaching a pump to it, so that the lead pipe to which the pump was attached was inside of and not fastened to the sheet iron tubing that was forced down along outside of the rod as it was driven. He put down wells in that way for Cornelius Brown and James Schermerhorn in the spring of 1862.

That he made a single pipe well for Geo. N. Copeland in 1862, and this was the first single pipe well he knew of being made in Cortland. That in 1862, 1863 and 1864, he made these wells in great numbers in Cortland, Homer, Moravia and Elmira, N. Y.

This witness also testifies that he has experimented since with two-pipe wells, where the air can go down between the

:hat a well of that kind will furnish as much
h a single pipe. R. P. 2051
)llo, examined November, 1880, testifies that
n Mudge to make the well on the fair ground
: the 76th Regiment was there. It was a
The outside pipe was much larger than the
ich the pump was attached. That the air
down to the water between the two pipes.
Brown, examined September, 1880, testifies
ett made a well for him in Cortland in 1862,
wed of Byron Mudge. That thay undertook
)n curbing first, but could not. They then
ıd forced that down the hole made by the
that lead pipe was inserted inside this iron
ıe pump was attached.
'oster, examined September, 1880, testifies
:ll made by James Suggett in the fall of 1862.
iven well, was in sight of the road, and was
ed by a great many people. That such wells
ıt in Cortland a great deal at that time.
ıpson, examined August, 1880, testifies that
and long before 1861. That he heard these
lked of; saw Suggett with his tools going
:his kind of well. That Suggett made a well
ınd, on a prominent street. That Green then
l, and must have heard of these wells. That
lge going around with tools, making these
nd it was known generally how they were
n was frequently seen on the streets of Cort-

vill observe that in the evidence of these three
druff, Bates and Bolles, the knowledge is
) Green directly. Each of these individuals
about their wells; two of them telling him
ells, how they were made and who made them,
doubts as to their success; and to each of
)ressed the utmost confidence in the wells and

in their success. Whatever may be claimed by Green as to the well on the fair ground being an experimental well, it cannot be claimed that the wells made for Woodruff and Bates were experimental, or that they were permitted to be made for the purpose of testing the practicability and permanency of that kind of well. These wells were sold to Woodruff and to Bates. Mudge made them for the money he received for making them. Green had full knowledge of their construction and their use, who made them and how they were made. All this was known to Green in the fall of 1862 and the spring of 1863. But with this knowledge brought home to him in the most direct and positive manner, he waits three and four years before he takes any steps to protect his rights by a patent.

Then about the same time that Bates had his well made. Dr. Bolles desires to have Mudge make him a well. In hunting for Mudge he comes upon Green; he informs Green as to what he wants, and as to what he has heard of the well on the fair ground in the fall of 1861. Green imparts to him the information desired, tells him that the well on the fair ground worked nicely, and then cites him to Byron Mudge, telling him that Mudge makes the wells, but he, Green, does not.

In these three cases facts are brought home to the knowledge of Col. Green that these wells were in use and were being made extensively by Byron Mudge; that the people of Cortland were using them; that Mudge was going around with a pile driver twenty feet in height, to drive down the rods, and when men ask him in regard to the wells, he informs them that Mudge is making these wells, but he (Green) is not.

Thus we see in our case we have brought home direct and positive knowledge to Green of the sale and use of these wells, more than two years before he applied for a patent.

Thus we say that with this knowledge on his part, it defeats his right afterward to obtain a patent; and a patent obtained under such circumstances is void.

In the case of Sisson vs. Gilbert et al., 5 Fish. P. C., 109, rt says: "The fact that an invention was in public use

"and on sale with the consent and allowance of the inventor "more than two years before his application for a patent, ren- "ders the patent invalid, however great the hindrance to the "application, and whether caused by want of pecuniary means "or other misfortune."

And in the case of Shaw vs. Cooper, 3 Whitman, Patent Cases, 173, the Court says: "Whatever may be the intention "of the inventor, if he suffers his invention to go into public "use through any means whatever, without an immediate as- "sertion of his right, he is not entitled to a patent. Nor "will a patent obtained under such circumstances protect his "right."

If we take now the testimony of William Winter, E. De Puy Mallory, Lucien Dexter, Levitt D. Garrison, Artemus Reed, Isaac M. Seaman, Ira V. Hicks, Julius A. Graham, Geo. N. Copeland, John S. Sampson and James Suggett, it will be clearly seen that during the years 1862, 1863, 1864 and 1865, James Suggett and Byron Mudge were making a business of putting down this kind of well in Cortland and vicinity; that in 1863 one was put down in the public street in front of the engine house, and was used to attach the suction hose of the fire engine for the purpose of extinguishing fires. And this was right at the edge of the sidewalk by which Col. Green had to pass in going to and from the post office and his church, and was known to the public and was used there for a number of years, and Green was daily passing this well. That another well was put down where they were building a store on Main street; that Green came and stood by while they were making the well, and saw the operation. Another well was made in a restaurant where he frequented and at which he was almost a daily guest; and this well was in constant use, used by nine out of ten of the persons who visited the restaurant. Green was in this restaurant almost daily, chatting with the proprietor, reading the papers and conversing with the guests; the well was in the main room in which the guests assembled, in plain sight and in constant use, and any one coming into the restaurant must have seen it, and

persons knowing of that kind of well would at once recognize it as a driven well.

Another well was put down in the grocery store where he and his family traded; was in front of a south window, in plain sight of all who came into the store, and could readily be distinguished from its appearance, as a driven well.

Others were put down in other places in public; were known of by the people living in Cortland, and after 1863 nearly every new house or store or other building that was erected in this town of between two and three thousand inhabitants, had one or more of these driven wells.

A blacksmith having a shop on a public street, was employed largely during 1862, 1863 and 1864, in fixing rods and preparing pipe to make these driven wells. Mudge and Suggett were going around the village with pile drivers, making a business of putting down this kind of well. The people discussed in public, and on the streets, and in their shops and stores, the practicability, permanence and cheapness of this kind of a well.

Col. Green, during the four years, 1862, 1863, 1864 and 1865, was constantly upon the streets, and in the shops and stores and public places in Cortland, and certainly must have heard these conversations.

In the case of Shaw vs. Cooper, 2 Whitman, P. C., 173, the court says: "Where public use is known, or might be "known to the inventor, knowledge of its use and acquies-"ence is presumed." And in Sisson vs. Gilbert et al., 5 Fish. P. C., 109, the court says: "Consent and allowance may be "inferred from acquiesence in public use, where the inventor "might have known of such use."

In the case of Egbert vs. Lipman, 14 O. G, 822, the Circuit Court held that a use by one person, other than the inventor, with his knowledge and allowance, was a public use, and if continued for more than two years before an application, it was an absolute abandonment to a right to a patent. On December 9, 1881, the United States Supreme Court affirmed the decision of the Circuit Court in that case.

In Edgerton et al. vs. Furst & Bradley Mfg. Co., 9 F. R., 450, the court says: "When the article has been in use for more than two years prior to the application for a patent, the patent is void."

In the cose of Henry vs. the Francistown Soap-Stone Co., 2 F. R., 78, the court says: "A single sale in the usual course of business of the patented thing, more than two years before the application for a patent is filed, will render the patent void, whether the sale is optional or conditional."

And in the case of Perkins vs. the Nashua Card and Glazed Paper Co., 2 F. R., 451, it was held that public use will be presumed when the public might have known of it. Use in a factory by workmen not pledged to secrecy, is a public use. A very trifling use, or a publication purely technical, is held to be public use.

In the case of Manning vs. Cape Ann Isinglass Co., Reporter (Boston) Vol 9, p. 337, the court says: "The use of "an invention in a factory, where any person may see it, is a "public use, and after two years of such use the invention be- "comes a public right."

Now in these cases we have proven that Mudge sold the well to Julius A. Graham in October, 1861. This fact has been proven fully, and is in no way contradicted, either by Green or by any other evidence introduced on the part of complainants.

This was not a well for experiment, but was made and sold for the money that it would bring. Green knew about it, called the attention of several persons to it, explained the process by which it was made, and extolled this method of making wells from the time this was made, which was before the middle of October, to the time he shot Captain McNett, which was December 6th.

These facts are not in any manner denied, contradicted, impeached or avoided by any testimony introduced or offered on the part of the complainants.

We then take the further fact that Mudge testifies, that before he made this well for Graham on the fair ground, he

had made three experiments after the one made on the land belonging to Green, and each of these wells, Mudge says, furnished an abundance of water, and demonstrated the feasibility and practicability of this kind of well.

Then there was nothing new to be learned in regard to the matter of driving the rod to make the hole, or inserting the tube in the hole thus made, at the time when he made this well on the fair ground. There was no necessity for further experiment The invention was complete, and a sale of the invented article at this time was putting the thing in public use. Green admits that he knew of this use.

Under the authorities above cited, such a sale, if made more than two years before the application for a patent, is an abandonment of the right to a patent.

In addition to this testimony, take the testimony of H. W. Woodruff, Henry Bates and Dr. H. A. Bolles, and Green is proven to have had full knowledge of the use of these wells and of their manufacture by Mudge, as early as April, 1863. This shows an acquiesence in the use of wells by Col. Green, and he did not for more than three years make any claim to the right to a patent.

In regard to the excuses that have been offered in evidence for this delay, we desire to cite the court to the speech made by Senator Windom, in the Senate of the United States on this subject. This speech was made after the decision by Judge Benedict, in the case of William D. Andrews, et al., vs. Theodore A. Carman, had been given to the public, and while the facts and the proof were yet fresh in the minds of the people.

The extract is as follows:

"The grounds upon which the court excused the 'extra-
" ordinary delay,' and denied to the public, rights accruing
" from Green's lack of ordinary vigilance, seemed to me so re-
" markable that my curiosity was stimulated to make further
" inquiry as to the character of some of the transactions which,
" in the opinion of the court, 'furnished a proper excuse' for
" omitting the vigilance usually required of patentees for the

"protection of the public. In an able report upon the sub-
"ject made by Judge-Advocate Holt, in which he carefully
"reviewed the facts produced on Green's criminal trial, he
"stated some of his conclusions as follows:

"The entire evidence and the charge of the Judge in summing up the case
"having now been read, the conclusion is arrived at by this bureau that Green
"was not justified in shooting McNett, that his action was in itself reckless and in-
"temperate, and was not necessary for the purpose of enforcing discipline.

"The action by the latter (Green) must be viewed precisely as it would be
"viewed if he had killed McNett; and the opinion entertained is that this action,
"resorted to under circumstances deseribed, and not in the field before the enemy,
"but in a camp in the heart of a loyal State, was altogether without justification."

"In other words, after a most careful examination of the
"case, the learned Judge-Advocate arrived at the conclusion
"that the act of shooting McNett was a clear case of attempt-
"ed murder on the part of Green, and that his action must
"be viewed precisely as if the murderous attempt had suc-
"ceeded.

"It is not surprising, therefore, that in the language of
"Judge Benedict, 'the effect on Green was disastrous in the
"extreme,' but the extraordinary feature of the case is, that
"we suffer to remain upon our statute book a system of laws
"which a United States Circuit Court of moderate intelli-
"gence, and presumably honest, felt compelled to construe in
"so extraordinary a manner. The vigilance required of in-
"ventors in making known their claims through the Patent
"Office is designed for the protection of the public, and yet
"here is a case where such vigilance was excused because
"through an unsuccessful attempt to commit murder the ap-
"plicant became involved in so many troubles with his regi-
"ment, troubles with his neighbors, troubles with the grand
"jury, troubles with the criminal courts, with his government,
"with his church and with his pastor, that he could not be
"expected to find time to give notice of his pretended inven-
"tion by applying for a patent, and therefore, owing to the
"extreme pressure of his engagements, he must be excused
"from complying with the ordinary conditions required of in-
"ventors, and the public must be saddled with an odious mo-
"nopoly for his benefit."

Although under the evidence that was introduced in the Carman case, Judge Benedict held that there was not sufficient proof of the consent and allowance by Green of this use, in the cases at bar we have proved beyond a question that he had knowledge of the use and manufacture of these wells, and the complainants have failed to produce a particle of evidence to contradict that fact.

We desire particularly to call the attention of the court, in this connection, to the case of Henry vs. The Francistown Soap-Stone Co., 9 Reporter, (Boston) 706, where it was held that a single conditional sale was enough to render a patent invalid, if made more than two years before the application for a patent was made.

And also to the case of Campbell vs. The Mayor of New York, 9 F. R., 500. In that case it was held that the thing patented was such a thing that Knibbs, the patentee, could not make the trial of the article in private. In order to make any experiments they must be in public, as the attachment invented by him was one to be used on steam fire engines. In that case there was no proof that he allowed any one to use the invention but himself; and it was used only on a machine of which he was the engineer and had charge. While the use was in public, it was not a use that gave to the public a knowledge of the thing invented. Such a use, they held, was practically a private use.

In Miller et al vs. Smith et al, 5 F. R., 259, on page 364, the court says: "If the inventor keeps his invention a secret, "no delay in appling for a patent will forfeit the right to the "same."

Now in the case at bar there is not only shown the use in public, and in a very public and much frequented place, but that Col. Green especially called the attention of numerous persons to the well, and never at any time enjoined or requsted any secrecy about the well, but talked freely, and with all persons approached on the subject, recommending its use, its efficiency and practibility, and then telling them that he did not make the wells, but Byron Mudge did. It is shown by

Mudge that he informed Green from time to time how he was progressing with these wells, and the success he was having in making them, and that he made several hundred in and about Cortland county, N. Y.

It is also shown that James Suggett was making that kind of well publicly in and about Cortland village, and that at two different times Green stood by and saw him make wells in the manner described in Green's original patent. Notwithstanding all this, Green did not for more than two years claim that he was the inventor or entitled to any patent on the process of making this kind of well.

If Green had desired to keep this a secret, hec ould have had experimental wells made in a shed, barn or cellar, and could have enjoined upon those who were admitted to see, or employed to construct them, that they should keep the process a secret. But his allowing Mudge to put down the well on the fair ground for Graham, and receive pay for his time and material used in its construction, and allowing Graham to use the well for two months in a most public place and manner, is certainly, under the law, a public use, with the knowledge, consent and allowance of the inventor. And the uncontradicted testimony of Woodruff, Bates and Bolles shows that he allowed and encouraged them to employ Mudge to make the wells for them. These wells were not put down for experiment, but were put down and sold to the several parties for use, and have been in use from that time until the present, a period of nearly twenty-five years.

There is no adjudged case that the complainants have or can cite you to that holds that this kind of sale and use is not an abandonment of a right to a patent. We cite you to a number of cases that hold that a sale and use much less than this, is an abandonment. And the case of Seward vs. Gilbert et al, 5 Fish, P. C., 109, says that a patent obtained under such circumstances is invalid, however great the hindrances to the application, and whether caused by want of pecuniary means or other misfortune.

In this case the only hindrance or misfortune that has

been shown is that which Attorney General Holt denominated an attempt to commit murder, by the patentee, as stated by Senator Windom in his speech in the United States Senate, before quoted.

If the evidence introduced by the complainants on this point is examined by you, it will be seen that nothing lay in the way of Mr Green making an applicatian for this patent at any time before October, 1863 except his own rash, unjustifiable attempt to murder an officer of his regiment. No other excuse has been or can be offered for the delay; none other was taken into consideration by Judge Benedict, as stated in his opinion in the Carman case. Every thing that Green did, and every thing that was done by others, was in consequence of that most rash, unjustifiable, dastardly and cowardly act, committed by him upon an innocent and inoffensive subordinate, in a preparatory camp, in the heart of a loyal state and before any officer or man of that regiment had been mustered into the military service of the United States. This act was condemned by every officer of the government before whom it came, and was characterized by the Judge Advocate General of the United States, after a full examination of all the evidence adduced in the court that tried Green for this act, and of the charge of the judge in giving the case to the jury, and considering the whole facts as proven by the prosecution and the defendant, "as in itself reckless and intemperate, and altogether without justification."

If a patentee, after having made a valuable invention, should knowingly, deliberately and with malice, commit highway robbery and for that should be arrested, tried, convicted and imprisoned in the penitentiary for a term of five years, and during that time his invention should go into public use and become known and used by hundreds or thousands of people, no judge or court that pretended to do justice, could say that this was a reasonable excuse for his delay in applying for a patent. Any court would at once say that this man could not take advantage of his own wrong, to the injury of the public.

Or, if the inventor, without committing any crime or being imprisoned, or held in durance by any act of the officers of the law, should merely negligently and thoughtlessly sqander his means and spend his time for more than two years after having completed and put in use his invention, and should then apply for and obtain a patent, any court would, at once, say that a patent so obtained was void.

In the eyes of the law Green can certainly stand no better than the highway robber or the profligate dilettant. In these cases he is shown, by the testimony of the witnesses on the part of the complainants, to have been engaged, during the years from April, 1862 to May, 1866, in and about Cortlund, in preparing his defense on the indictment for shooting McNett, and in prosecuting the minister of the church to which he belonged for libel because he said that the shooting of McNett was not justifiable. He is shown to have spent a large amount of time in the office of Judge A. P. Smith, and to have assisted him materially in writing the history of the 76th Regiment, N. Y. Vol. Inft. and to have been around and upon the streets, in the stores, offices and shops, reading the papers, talking with the people and doing all things that a man of leisure might be expected to do.

It is true that some of the witnesses say that he talked about the wrongs that he had suffered by being dismissed from the command of his regiment and by the minister of his church having expressed the opinion that he was not justified in this most dastardly and villainous attack upon the life of a subordinate. But what convicted criminal did ei her of your honors ever sentence who did not complain that injustice had been done him by the witnesses, the jury and the court? We say that under the circumstances as proved by the complainants, Green was not entitled to any more delay in applying for this patent than any other criminal would have been.

Whatever hindrances were in his way were occasioned by his own unlawful act. No other person was to blame; no inducement was held out by the public for him to commit it. In the law as laid down in Sisson vs. Gilbert et al, that a de-

lay of more than two years is fatal, however great the hindrances, and whether caused by want of pecuniary means or other misfortune, which authoritative construction of the law has never been over-ruled, modified or pronounced incorrect, how can any court say that the unlawful and villainous act of the patentee shall offer him an excuse and refuge, from behind which he and his assigns shall be allowed to reach out and rob an innocent and confiding public. Will our United States courts make of themselves the arms that shall reach out all over the country, and by means of their many disks, fasten upon the property of the people in every state, county and district, and through their powerful adhesion, suck the life blood of the people and convey it to the central head, to feed this immense *octopus?*

In the decision in the Carman case by Judge Benedict, 9 F. G., 1017, he says: "It cannot be denied that knowlkdge of the putting down of these wells on the part of Green seems highly probable." In our cases we have shown by Byron Mudge that he reported to Green from time to time, as to the progress he was making in constructing these wells, and that Green knew of the fact of his making the wells. We prove also by H. W. Woodruff, that he talked with Green and told him about his well both before and after it was completed. We prove by Henry Bates that several times after his well was made and before the house wasc ompleted, he talked with Green about his well, told him who made it and how it was made. We prove by Dr. H. A. Bolles that he applied to Green to make him a well of that kind, and that Green told him that the well on the fair ground worked first-rate, that they were a good kind of well and told him to get Byron Mudge to make him a well.

Now here are four witnesses who testify in the most positive and direct manner that Green did know of the use of these wells in Cortland, all the way from October, 1861 to April, 1863.

Now if we take the testimony of W. O. Barnard, a witness who was called by the complainants and who testified that

he was a personal and particular friend of Col. Green, we find that he relates two facts which tend strongly to show that Green did not intend to patent this process. The first of these is, that Green, at different times, in the streets of Cortland and in the presence of a large number of persons, described the manner in which these wells were to be made. And that at another time, in the house of W. O. Barnard at Cortland, N. Y., in the presence of W. O. Barnard, his wife and daughter, Dr. Meacham and his wife and Mr. Brown and his wife, Col. Green explained the process of making this kind of a well, and illustrated it so thoroughly and completely that any person, without any skill in the well making business, could make a well of that kind from the description given by Col Green in the presence of these parties. This was in November, 1861, and after the well was made on the fair ground.

The other fact is, that acting on this description given by Green to him, the witness Barnard made a well at his tub factory in 1862, and at his own house in the spring of 1863, in the manner described by Green, and used them for all purposes for which he needed to use water. These wells were in no manner concealed or kept secret, and during the time they were being made, and after they were made, up to May, 1866, Green was a frequent visitor at the house of Barnard. They were fast and intimate friends, and the visits of Green to Barnard's house were frequent. These wells were in constant use, and according to the testimony of this witness, are in use at the present time. (Barnard's direct evidence, Interrogatory, No. 23 and his Cross-interrogatories, Nos. 17 to 30.)

We now wish to state that if Byron Mudge, in making these wells, was acting unders and direction of Col. Green, then Col. Green is bound by the knowedge that was given to the public in making these wells, and cannot be heard, to say that he is entitled to the benefit of Mudge's labor, but is not bound by the results his labor gave to the public. According to the testimony given by Col. Green in these cases he never, prior to 1871, attempted to make a well of this kind.

Nor did he make any experiments to see if a well could be made. All that was done in that line was the work of Byron Mudge. And Green claims that this work was done at his instance, request, and under his orders; that he was the military superior of Mudge and had the right to order him to do that work. While Mudge denies the authority of Green to order and direct him, yet he admits that the first suggestion came from Green, and that he made the first experiment at Green's request, and states further that he, from time to time reported to Green as to what he was doing and how he was succeeding.

So we wish to repeat that the complainants claiming that Mudge was acting as the agent of Green, Green is bound by all the knowledge that was given to the public by Mudge in making these wells. There can be no escape from this position. The general principle is so well established that we need make no citation of authorities. All the text books on that subject and the decisions of all the courts, State and Federal, have decided that question in but one way. Holding in that way, this court must find that as early as December, 1861, Mudge had made and put in operation, and sold for money, three wells, each of which covered the process subsequently patented by Green. This man was acting and continued to act for Green and under his direction up to April, 1862, when Green was discharged from the command of his regiment and Mudge returned to private life.

In Keels vs. McKensie, 9 F. R., 284, Brown D. J. E. D. Mich., Nov. 7, 1881. This patent was for an improvement in brick machines, substantially as afterwards patented, sent to another town to be tested, and if the parties were satisfied they could buy it. The machine was not purchased by the parties to whom it was sent for trial. The original patent was dated in May, 1876, and the machine that was sent out for trial was sent in August, 1873. The court says: "On the whole, the evidence, I think, establishes the fact that the machine was on sale more than two years before application was made for a patent."

In our cases the testimony is much stronger that these wells were on sale for more than two years, than in the case last cited. There is no evidence contradicting the testimony of Mudge, Graham, Woodruff, Bates and Dr. Bolles. But on the contrary all of the evidence introduced by either side corroborates the facts to which they have testified.

In Elizabeth vs. Pavement Co., 97 U. S., 134, this court said: "An abandonment of an invention to the public may "be evidenced by the conduct of the inventor at any time "within the two years named in the law." "The effect of the "law is that no sueh consequence will necessarily follow from "the invention being in public use or on sale with the invent-"or's consent and allowance at any time within the two years "before his application; but that if the invention is in public "use and on sale prior to that time it will be conclusive evi-"dence of abandonment, and the patent will be void."

On same point see:

Egbert vs. Lipman, 21 O. G., 77.
Consolidated Fruit Jar Co. vs. Wright, 94 U. S., 92.

In Rowley vs. Mason, Am. L. R., 106, the court said: "An abandonment of a perfected invention, no matter for what reason, cannot be re-called." To the same effect is:

Millers vs. Silsbee, 4 Mason, 108.
Pennock vs. Dialogue, 2 Peters, 1.
Jones vs. Sewall, 3 Cliff, 563.
Bell vs. Daniels, 1 Bond. 212.

Acquiescence in a public use is an abandonment.

Whitman vs. Cutter, 1 Gall, 478.
Savery vs. South, 1 McA. Patent C., 691.
Kendall vs. Winsor, 21 Howard, 322.
Babcock vs. Degener, 1 McA, Pat. C., 607,
Rich vs. Lippincott, 2 Fish, 1,
Hayden vs. Griffith, 4 Fish, 86.

We have cited your honors to a large number of cases in which this question of abandonment has been discussed, and in none of these cases was the evidence as clear, positive and full upon all of the points as in our cases. And in each of these the patentee has been held to have abandoned his invention, and we can see no escape from his being held to have abandoned it in this case.

GREEN NOW CLAIMED TO HAVE BEEN INSANE FROM DECEMBER, 1862 TO MAY, 1866.

We are aware that some testimony has been introduced in this case with the intention to endeavor to establish the proposition that after Green shot McNett, the undue excitement produced by that act of his rendered him insane. And that such insanity continued from that time to the time of his trial in May, 1866. The testimony offered for that purpose shows that while Green was with his regiment in Washington, and after he had learned how his act was looked upon by the authorities there, he became afraid that the members of his regiment or some other persons would mob him, and therefore made some foolish orders; and that after he had been dismissed from his regiment and had gone to his home in Cortland, he did considerable prating to his friends about the unjust acts of the government officials in suspending him from the command of his regiment, and made some attempts to get himself re-instated in the military service There is an attempt, also, to show by this evidence that this man was eccentric, quick-tempered, unevenly balanced in mind and was given to exaggerating his own importance, and desired to have people think that he was a man of unusual mental powers.

One of the witnesses brought forward to sustain the theory that he was insane is Dr. J. C. Nelson, who was one of the surgeons of his regiment. He did not see Green after he left the regiment in February, 1862, for some years. When he left the regiment he considered him as laboring under a great deal of excitement. But when on cross-examination he was inquired of as to his responsibleness for his acts, the Doctor expressed himself squarely, fairly and unequivocally, that Col. Green had sufficient mental power and sufficient control over his mind so that he should be held responsible for any act he might do, whether it was of a civil or a criminal nature. The only thing shown by the evidence of Dr. Nelson is that this

man was considerably annoyed, excited and angry because the military authorities of the government did not approve of his shooting Capt. McNett.

The evidence of the other witnesses called by complainants shows, notwithstanding his prating, fault-finding and general querulousness, Col. Green, assisting Judge Smith in writing the history of the regiment, preparing a very accurate statement of his grievances to be published in the history of the regiment, hunting up witnesses and preparing legal points for his defense on the indictment for shooting McNett, and generally busying himself in those matters that were of interest to him.

Looking at the reason in this case what do we find. Here is a man indicted for an assault with an intent to kill. He is about to be tried. His trial is to come off in the town where he has been living for nine years. There are present those who have known him the most intimately. Those who have been associated with him in business and social relations. He is defended by able and shrewd attorneys. He and his friend suggest that a plea of insanity be put in as a part of the defence. But his attorneys, after a full and careful examination of the matter, refuse to adopt that course.

Now it may well be concluded by this court that these attorneys, after a careful examination, found that such a plea could not be sustained and consequently abandoned it, believing, as your honors know every attorney does believe, that an unsuccessful attempt to establish insanity would injure rather than benefit their case.

The complainants in this case call another witness, Gen. Doubleday, as an expert, we take it. This man never had any personal communication with Col. Green. He did not see him when he was in camp near Washington, but certain hypothetical questions being propounded to him, he answers on those questions that he thinks Green, at the time, was insane But your honors will remember that the time when these acts were done, as stated in the hypothetical questions to Gen. Doubleday, was in February, 1862, and before Green returned to

Cortland, in April, 1862. Now it is remarkable that no witness, who knew Green from the time he returned to Cortland in April, 1862, to May, 1866, states any time or gives any reason for thinking that Green was insane at the time.

As to the question of the insanity of Col. Green, we wish to cite your honors to the case of Alexander D. Frazier vs. Wm. Jennison et al., decided in the supreme court of the state of Michigan, Nov. 1879. The opinion is by Judge Cooley. The case was a contest as to the will of Alex. D. Frazier, and the opinion is a very lengthy one, covering 23 printed pages and is found in the North Western Reporter, published about the first of December, 1879, on page 576. On pages 595 and 596 the question of insanity is discussed.

The principal ground for contesting the well was that of insanity. It appears that Alex. D. Frazier, the testator, was about 83 years of age at the time the will was made; that he had been confined to the house for about 16 years; that he had a cancer in his face; that he was weak in body and necessarily weak in mind; that he had had paralysis; and five experts testified upon the hypothetical question, that they should say he was not of sound mind. Yet it was shown in evidence in that case that Mr. Frazier continued to manage his business as well as a man of his age could, up to the time of his death. In passing upon this subject of insanity in the supreme court, Judge Cooley makes the following remarks:

"Commerce of all descriptions must languish if contracts "were subjected to the sort of inquiries which seem to be "thought proper in the case of wills Yet in law this is as ad- "missible in one case as in another, and as reasonable. But "nothing can be more illogical than the notion that a percep- "tible taint of insanity, not evidenced by any illusion or dis- "order which the public can detect, and not apparently af- "fecting the ability to manage business concerns, shall vitiate "all civil acts, even though it is conceded that an unquestion- "abic partial insanity shall not have the like consequence, "provided the delusion is upon some subject foreign to the "act done. For our part, we are not ready to assent to any

"rule that shall make a derangement of the faculties operate "to incapacitate a person from making a valid will, when it is "neither of a character to render the person incapable of act- "ing rationally in the ordinary affairs of life, nor has it mani- "fested itself in the testamentary provisions. Whatever "court overturns a will ought to have reasons to stand upon "which are within the grasp of the common sense of man- "kind."

We take it that this is a fair and a very careful exposition of the law, and would be applicable to this case. It certainly has been shown that Green did attend to and manage his ordinary business and materially assisted his attorneys in preparing his defence, and, as testified to by Judge Smith, prepared a very important and difficult part of Smith's history of the 76th Regiment.

He was upon the streets, in the stores and shops and visiting with the families of the people of Cortland, and none of them suspected that he was insane. We say, then, that taking the law as expounded by Judge Cooley, and the facts as proven, there is no reason why Green's laches should be excused on the ground of insanity. The complainants have failed to prove that he was at any time in that condition, which Judge Cooley says is absolutely necessary to relieve a man of the consequences of his civil acts.

It certainly ought not to be held that a man who was sane enough to trade horses, or buy and sell real estate, was yet so wanting in mental capacity that he could put into public use an invention, let it be used from three to five years with his knowledge, and then recover royalties on a patent that had been granted after waiting more than five years from the time of the invention.

ARGUMENT ON INFRINGEMENT BY GEO. HOVEY.

We wish now, before closing our argument, to call the attention of the court, particularly to the construction that has been given to this patent by this court in the Eames case, and after calling attention to that construction, to call the court's attention further, to the method of making wells, as practiced by Geo. Hovey, since the fall of 1870.

In Green's re-issued patent, (paragraph 3, as numbered by us,) he says: "The methods of constructing wells previous "to this invention were what have been known as sinking and "boring; in both of which the hole or opening constituting "the well was produced by taking away a portion of the earth "or rock through which it was made."

By this description thus given in his patent, he certainly disclaims the use of his invention where any portion of the earth or rock is taken away. He here fully describes that method of making wells as being known long before his claimed invention. But if not so known, under the recent decision of Miller vs. Bridgeport Brass Co., 21 O. G., 201, the fact that he described that method in his patent and did not claim to patent that method, is an abandonment of the right to patent or to claim it.

In the case of Campbell vs. James, 21 O. G., page 337, the same principle is also announced as being the law. In fact no case has been found by us, nor have the complainants cited any case where a different doctrine is held.

Then we say, in all confidence, and with the full belief that the solicitors and counsel for the complainants will not dispute it, and knowing that they cannot successfully bring any argument to bear, or cite you to any authority wherein the contrary doctrine has been successfully maintained, that it is an established construction of the law, that when a patentee describes in his patent any principle as being known to

him, yet fails to cover the same by his claim, he is estopped from ever after claiming that the use of the principle so described is an infringement of his rights.

The patentee in this case, as though to place that question beyond all doubt, speaks, in the 4th paragraph of his specifications, of "the hole being thus made by a mere dis- "placement of the earth which is packed around the instru- "ment, and not removed upward from the hole as it is in "boring," thus repeating the declaration that where any portion of the material in making the well is removed upward from the hole, a well so made is not an infringement of his patent. As though to more emphatically and concluively estop himself from claiming a bored well as an infringement of his patent, in the last clause of his claim he repeats, that his method of making a well is one where the hole is made without removing the earth upward as it is in boring. Thus again emphasizing the fact that if a well is made by boring with an auger down to the water-bearing stratum, and the earth is removed upward by the auger, such a well does not infringe this patent

This claim is sustained by the decision of Judge Benedict in the Carman case, in the 9 O. G. page 1013, wherein the judge holds "that the essential feature of making the well, is "the packing of the earth around the instrument without re- "moving the earth upward. * * It is by means of "this packing of the earth tightly around the tube that the "force developed by the creating of the vacuum in the well "pit is brought to bear directly upon the water lying in the "water-bearing stratum, to force it into the well pit; and this "driven tube forms the well pit of the new invention, for as "stated, it is to be a tube made air tight throughout its length "except at its lower end, where are to be perforations for the "admission of water, and through and from which the water "may be drawn by a pump; the specification also mentions "the vacuum, and points out where it is to be created, for a "vacuum must of necessity be formed in the well pit and in "the water-bearing stratum by operating a pump attached to

"such a tube, so driven into the earth." This court, in the Eames case, adopted this construction.

Any process differing from this would not be an infringement of Green's patent.

Taking now the evidence in these cases, we find that in the fall of 1870, Geo. Hovey commenced making wells. He at first worked for E. S. and E. A. Hovey. During the time he worked for them they changed their method of making wells. They made wells by boring down through the earth to and into the water-bearing stratum, and removing all the earth upward, out of the hole, with the auger. They used a common pod auger, 3 inches in diameter. Around that they had a metal sheath to hold the material on to the auger as they drew it from the hole each time to empty out the material. With this all the earth was taken up out of the hole down to the water-bearing stratum, and some of the earth in that stratum. The auger made a hole 3 inches in diameter. The largest tube used at any time by them was only 2 inches in external diameter. It fitted loosely into the hole thus made. At several different times, Mr. Hovey tells us, he has dropped little pebbles down the hole, outside the tube, and heard the splash as they struck the water. The other sized tube used was only $1\frac{3}{4}$ inches in diameter. It is in evidence that in all the wells made by Geo. Hovey after he went in in partnership with E. S. and E. A. Hovey, the hole was made by boring and taking the earth up out of the hole as they went down. And that in no instance did he, his workmen or his partners make a well after May 9th, 1871, by driving an instrument into the ground, moving the earth laterally, and leaving it packed around the instrument. But in all cases the earth was taken up out of the hole as in boring. This fact is testified to positively by Geo. Hovey, E. S. Hovey, E. A. Hovey, B. R. Hovey, D. W. Hovey, Andrew Fountain, Geo. W. Loan, D. B. Cox, Chas. B. Cox, Thos. Cox and Peter Miller, introduced by complainants, and by these same witnesses, so far as they were called by the defendants.

Therefore we say that it has been fully and clearly pro-

ved that Geo. Hovey has at no time infringed the re-issued letters patent of Nelson W. Green, since the date of their issue. No evidence has been introduced by the complainants, to in any manner contradict or weaken this testimony, which was introduced by the complainants, and by them positively and absolutely proven, and which is also proven by us on the part of the defendants.

In the American Middlings Purifying Co. vs. Atlantic Milling Co., 4 Dillon, 100, on page 104, the court says: "It is "necessary for the plaintiff to sustain the allegation of in- "fringement by a preponderance of evidence." And on page 105, the court says: "The infringement is but feebly support- "ed by a single witness and denied by many." And on page 106, the court again says: "The full burden of proving that, "(infringement) rests upon the plaintiff as an entirely new "issue of fact." And in Spring et al vs. Domestic Sewing Machine Co., 9 F. R., 505, the court says, (on page 508) "It "only remains to consider the question of infringement, in "proving which the burden is upon the complainants." We see that in this case the complainants have wholly and entirely failed to prove infringement on the part of Geo. Hovey since the date of Green's re-issued patent, May 9, 1871, and under the law, as it is and has been since 1839, complainants cannot claim for an infringement prior to the date of the re-issue. And in no instance have complainants showed that Geo. Hovey, by himself or family, has used a driven well at any time. The only testimony on that point is the testimony of Mr. Hovey himself, and his testimony is that he never has, at any time, owned or used a driven well at his home, and for his own use or the use of his family.

In the case of Electric Railroad Signal Co. vs. Hall Railway Signal Co., 5 S. C. R., 1069, opinion by Matthews, J., this court says: "To constitute identity of invention and therefore "infringement, not only must the result be the same, but in "case the means used for its attainment is a combination of "known elements, the elements combined, in both cases, "must be the same and combined in the same way, so that

"each element shall perform the same functions; *provided*, "however, that the differences are not merely colorable ac- "cording to the rule forbidding the use of known equiva- "lents."

We wish to call the attention of the court to the case of Campbell vs. James, 21 O. G., 337, on page 344, wherein the Supreme Court says: "The case, then, is narrowed down to "the claim of the specific device of the blotter as described "and claimed in the original patent, and the combination "thereof with the post-marking device in one instrument by "means of the cross bar. This being the case, it will be per- "tinent next to inquire whether the defendant used that de- "vice or combination. * * The stamp used by him until "January, 1876, had a blotter of cork, it is true, but it was not "the specific device described in the patent and towhich the "patent was restricted. The cork was not enclosed in a cyl- "inder as demanded by the patent. It was a naked piece of "cork directly attached to the cross-bar by a common wood "screw, passing through a hole in the cross-bar and driven "into the cork, firmiy holding it to the bar. This device, of "course, was different from that which was patented."

So we say that the method of making wells as practiced by Hovey, in which he bored a hole into the ground with an auger 3 inches in diameter, and inserted into that hole a tube, through which he pumped water, is not an infringement of the patent on which this suit is brought. In a number of other cases that have been decided by the various Circuit Courts, we find that this strict construction of the claim of a patent is held, and when the process differs from the patent to the extent that Hovey's does, the courts have held that it does not infringe.

In the case of Ives & Miller vs. Hartford Spring and Axle Co., 11 F. R., 510, District of Connecticut, decided by Judge Shipman, the court says, (on page 513,) "The plaintiff's re- "issue rests upon the superior mechanical method in which "the patentee constructed Crannell's hub, axle and shoulder, "with their flanges and recesses. It is limited to the cup-

"shaped flanges and recesses of the original patent and can-
"not be enlarged to take in any shape of concentric flange
"on the shoulder and a correspondingly shaped concentric
"recess in the hub to enclose the flange, although the device
"has all the other requisites described in the first claim.'

It is also claimed by Andrews that in case a well was dug down to the water and stoned up, in the usual way, and then gravel or sand was hauled and filled in around a pump set in the well, so that the earth was tight about the tube of the pump, such a well would be an infringement of his patent. Inasmuch as the owner of the patent makes this claim, and as the court construes the patent to be one for a tube well, where the earth is tight about the tube of the pump; we say that where a well is made in a different way, that is where it made by having a hole larger than the tube, so that air passes down around the tube to the water, such a well does not infringe the patent.

So we say that following these cases, this court must hold that Mr. Hovey has not infringed Green's patent as reissued.

As to the effect produced in the water-bearing stratum by pumping out the fine sand in accordance with the specifications in Hovey's Patent, No. 123,903, dated Feb. 20, 1872, see the testimony of the following witnesses:

Geo. Hovey, Record, pp. 76 and 1622.
B. R. Hovey, " " 114 and 117.
D. W. Hovey, " " 127, 128, and 135.
E. S. Hovey, " " 188 and 1734.
E. A. Hovey, " " 1752 and 1753.

AS TO HOVEY'S PATENT.

On this question of infringement, we wish to call the attention of the court to the fact that Mr. Hovey justifies under a patent issued to E. S. Hovey; No. 123,903, dated February 20, 1872, the specifications of which are as follows:

SPECIFICATION.

To all whom it may concern:—

Be it known, that I, Elias S. Hovey, of Independence, in the County of Buchanan and State of Iowa, have invented an "Improved method of making Tube Wells," commonly called "Drive Wells," and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawing, in which Figure 1 is a side elevation of the first or temporary tool used in driving the well and Fig. 2 is a similar view of the permanent, perforated and gauze-covered tube-end, which is substituted for the temporary tool, as hereinafter described.

In localities where tube-wells are commonly employed, the subsoil from which water is drawn usually consists of gravel intermingled with quicksand. If a perforated tube end covered with fine gauze, be driven into a soil of that character, the fine sand very soon chokes the gauze, and prevents the entrance of the water into the tube. After a very short time wells made in that way become entirely useless.

My improvement consists in driving the well, in the first instance, with the tool represented in Fig. 1, having large perforations, which in practice, I usually make an eighth of an inch in diameter, and after pumping out the fine sand from the gravel in immediate proximity to the well-tube, inserting the tube-end represented in Fig. 2, having large perforations covered with wire gauze. The effect of this method of making the well is that nothing but coarse gravel is left in immediate contact with the lower end of the tubing, and that gravel forms an open filter through which the water flows freely, without carrying with it the fine sand and dirt, which would clog the gauze and stop the operation of the well.

It will be perceived that the office of the perforated tube first driven into the ground, is solely to receive and remove sand and minute matters that would prove obstacles to the flow of water through a fine reticulated material, in order to create a well-space, or to induce the settling-down to the lower end of the tube of pebbles and such grosser matters as will constitute a filtering bed, through which the water will percolate to the induction orifices of the tube; and that an exterior or finely woven wire would not answer this purpose, nor would the coarsely-perforated tube, first inserted, answer the subsequent uses of the well when the procurement of pure water is the object sought to be obtained.

A series of practical experiments, running through several years has convinced me that this method of driving a tube-well is an effectual remedy for the difficulties which have heretofore attended wells of this class in localities where gravel and quicksand formed the subsoil from which water is obtained. The insertion of the coarsely perforated tube-end alone does not effect the desired object, since the pump will continue to draw fine sand and dirt through the large perforations; but experience has demonstrated that after the fine particles have been pumped from the gravel in the immediate vicinity of the tube, if a finely perforated tube-end be substituted for the coarse one, the water will continue to flow pure and clean, without clogging the meshes of the gauze. The pumping out of the fine sand &c. through the temporary tube-end, so loosens the surrounding soil that no difficulty is found, in practice, in withdrawing the tube, and re-inserting it with the permanent gauze-covered end attached.

Having thus fully described my invention, I do not claim a perforated tube-end for wells, whether open or covered with gauze; but what I do claim is, the method or process of making drive wells hereinbefore described, the same consisting in the use, in the first instance, of the temporary, coarsely-perforated tool or tube-end, represented in Fig. 1, followed by the introduction of the permanent, finely-perforated or gauze covered tube-end, as and for the purpose set forth.

This patent is yet in full force, and we claim that the complainants in this case cannot exact a royalty from those using Hovey's patent.

The uncontradicted evidence of the respondents shows clearly that the wells made by Hovey, and and used by the other respondents in the Iowa cases, are constructed under

the Hovey patent. This fact being proven, we claim that these actions to recover for an infringement of the Green patent cannot be maintained against said Hovey, nor the other defendants owning or using wells constructed under the Hovey patent.

Section 4918, Revised Statutes, provides:

"Whenever there are interfering patents, any person in-
" terested in any one of them or in the working of the inven-
" tion claimed under either of them, may have relief against
" the interfering patentee, and all persons interested under
" him by suit in *equity* against the owners of the interfering
" patent, and the court, on notice to adverse parties, and oth-
" er due proceeding, had according to the course of equity,
" may adjudge and declare either of the patents void, in whole
" or in part, or inoperative, or invalid in any particular part
" of the United States, according to the interest of the parties
" in the patent or in the invention patented. But no such
" judgment or adjudication shall affect the right of any person
" except the parties to the suit and those deriving title under
" them subsequent to the rendition of such judgment."

If two patents are granted for the same thing, both patentees will stand upon a footing of equlity, and their rights be determined as provided by law. One patent cannot be an *infringement* on another. Both are issued by the same authority, confer equal rights and are protected by the same laws. But when one patent interferes with another, the remedy is provided in the section above cited.

The intention of the law above quoted is obvious. It enables parties deriving title under a patent to plead defenses which would not be allowed in these actions. It provides for an action in equity, and is a most equitable provision of the law. It protects fully, as the law should, any person who derives title under a patent issued by the United States, until that patent has been adjudged, in the proper action, void or invalid. The patent act of 1836 contained a similar provision so far as the rights of persons deriving title from or under the patentee were affected. Under that act as well as under

the present patent law the rights of parties deriving title under interfering patents, prior to an adjudication declaring either of such patents void, inoperative or invalid, were not affected by such adjudication.

If Hovey's patent interferes with Green's patent, complainants, by a bill in equity, might have had the interfering patent adjudged void or invalid, and thus protected their interests in the future; but such action would not affect the respondents who had, prior to such adjudication, derived title from Hovey.

Complainants introduced in evidence the Hovey patent, (Vol. 1 p. 60, of complainant's record,) and proved its ownership by Geo. Hovey. (Id. Vol. 1, p. 63, question 44.) Respondents prove that the wells made by Hovey and owned and used by the other defendants were constructed under the Hovey patent. Hovey is the owner of a valid existing patent. He has, in good faith, constructed wells under and by virtue of that patent. In equal good faith the other respondents, by purchase, have derived rights uuder such patent, and rely on the protection guaranteed them by the statute.

The Hovey patent was granted February 20th 1872. For more than seven years Hovey and his assignees were constructing wells under this patent in Iowa and other states. No action was brought to try the validity of this patent, or the question as to its interference with Green's patent. But now, complainants, who have owned the Green patent during all this time, attempt to extort a royalty from persons who in good faith have purchased and are using an article constructed under and by virtue of a patent in which complainants have no interest.

We cannot believe that a court of equity will permit this provision of the law to be evaded in these actions, and deny to respondents the protection guaranteed them by statute. The provisions of Sec. 4918 are peculiarly applicable to the respondent Hovey. The evidence shows conclusively that he is not using, nor does he own a well other than the ordinary dug well. He has constructed a large number of wells,

which, it is alleged, are infringements on the Green patent Hovey defends by pleading that the wells made by him were constructed under a patent granted to one Elias S. Hovey, No. 123,903, dated Feb. 20, 1872, respondent being the owner of territory in Iowa.

Until this patent is set aside by the action above provided, no royalty can be collected from Hovey for making wells according to his patent.

THE CASE OF EAMES VS. ANDREWS.

In the above case this court said: "The manner in which "water is obtained and supplied by means of these two des- "criptions of wells is thus stated, as we suppose correctly, by "an expert witness in this case:

'Thus forming a well, air tight from its upper end, into 'and below the surface of the water in the earth, that upon 'operating the pump attached and removing the pressure of 'the atmosphere from the well, the pressure of the atmos- 'phere through the earth upon the surface of the water in 'the earth would force the water into the body of the well 'with the velocity due to the pressure of the atmosphere, and 'that the supply would be continuous, so long as water was 'contained in the stratum of the earth with which the lower 'end of the pipe was in communication. * * *

'The water is supplied to it directly from the earth sur- 'rounding it in a direct inverse ratio to its distance from the 'well, and the friction of the water through the earth being 'directly as the square of its velocity, as the distance from 'the well increases the water moves very much slower than 'it does immediately next to the well itself; but the area of 'the source of supply being increased exactly in the ratio of 'the square of its distance from the well, and the friction be- 'ing increased exactly as the square of the velocity, the one 'exactly counterbalancing the other, it follows, from natural 'laws, that the surface of the water in the earth surrounding 'the well is and must be maintained at practically a given 'level. * * * *

"The scientific theory stated by the expert witness on "behalf of the complainants, as an explanation of the princi- "ples according to which the patented process operates in "furnishing a supply of water by means of a driven well, is "not contradicted or qualified by any opposing testimony, "and so far as we can know, is not inconsistent with accept- "ed scientific knowledge."

Before commenting on the unreliability of the foregoing testimony, and the untruthfulness of the conclusions given by this expert, whose name is not given, we wish the court to bear in mind that there is, in this case, no such evidence offered by the complainants and, of course, we did not offer any testimony to contradict that which was not in the case.

We say that the statements have very little foundation in fact, and that the conclusions are wholly untrue and are not based upon actual tests. Actual tests, as proven in this case, show that the same amount of water can be drawn from an open as from a driven well, in the same water-bearing stratum if sunk to the same depth.

The tests made were in the earth and not in a box of sand. The parties had the tools that are used in making the tube, or driven wells and those used in making open, bored wells in the same kind of soil. The surroundings were natural and the air was in the same state as it is when you operate a pump in obtaining water from a well for the ordinary uses of life.

With these surroundings the experiments made by E. A Hovey, E. S. Hovey, Geo. Hovey, Dr. Geo. Warne and others demonstrated that the air goes down around any tube that can be driven into the ground in quantity that would furnish all the pressure needed to supply an ordinary pump with water for its operation, and that the air went down through the earth near the pump, enough to stop the flow of water when the earth was packed around the pipe, as soon as the water was exhausted from above the first vent hole in the pipe.

These experiments also demonstrated the fact that an

open well would furnish as much water, in the same time, as a driven well, and that the water was not lowered more in the open than in the driven well. They also proved true the theory of Prof. Anthony, that the driven well has no advantage over the open well in the matter of the pressure of the atmosphere. These experiments also demonstrated that the walls of a hole bored into the earth by an auger would stand for a long time, and it would prove a practicable place into which a pump could be put long after the hole was bored.

The testimony of Dr. H. Bryant, Prof. W. A. Anthony and Ives W. McGaffey prove that the statement of the friction of water moving on itself or in the earth is not as stated in the testimony of the expert witness in the Eames case. It is too absurd for human credence that water moving either upon itself or through the earth, has a velocity that is inversely as the square of its distance from the pump, and that the friction of the water is as the square of its velocity, and that there is a natural law that in such cases keeps the water at practically the same level throughout its extent as a source of supply to any given pump.

The testimony of Prof. Anthony and of Ives W. McGaffey clearly show that the water is kept at its level by reason of a well known law of fluids, that causes them, at all times, to seek their own level. We know that gravity acts upon water and that water is also pressed upon by the atmosphere at the rate of about 14 pounds to the square inch, and that these two forces, when we consider the ease with which particles of water move upon each other, are sufficient to press down the surface and cause it, at all times, to be on practically the same level.

It is not possible that the friction of water exactly counterbalances the velocity; if that were the case there could be no motion and the water would stand still. Who ever heard of the friction of a body exactly counterbalancing the force that set it in motion? If that were possible there would be no motion and the body would remain all the time in the same place. Place water, for instance, where you can see it,

as in a bath tub. Let the tub be nearly full, then pull out the waste-pipe cork and observe the effect. The water passes out of the tub; all has to go to one end to pass off, but if you will notice, the water keeps a uniform level. It does so from the known law, and the pressure of the atmosphere upon the surface keeps it at the level. The water passes off by the force of gravity aud is kept at same level bv the weight of the atmosphere upon its surface. It will make no difference if you insert a pump in the tub and pump out the water; the same level will be maintained, and the fact will not be due to friction, but to the pressure of the atmosphere and the attraction of gravitation. If it was due to the friction exactly counterbalancing the velocity, there would be no movement and the tub would remain full.

If the statement of the expert is true, let us see what the result is from the figures. Take a given point for the station of the pump; then take three points in the surrounding earth; one is 2 feet, another 4 feet and the third 6 feet from the pump. Then the squares of these distances would be 4, 16, 36, respectively, and by the statement of the expert, the velocity of the water moving to the pump, when in operation, would be represented, at 2 feet, by 36; at 4 feet, by 16; at 6 feet, by 4.

The friction, this expert says, is directly as the square of the velocity. If that is true, then the friction, at 6 feet from the pump, is represented by 16, and at 4 feet from the pump, by 256, and at 2 feet from the pump, by 1296, these being the squares of 4, 16 and 36. respectively. Then he says that this velocity and the friction of the water exactly counterbalance each other. If that is true, there would be no motion of the water and the pump would be worked in vain.

In this way the expert attempts to account for the water always remaining at practically the same level. The fact is, however, that the water remains at the same level by reason of the attraction of gravitation acting on each particle, and the atmosphere pressing evenly down upon the surface, with its wonted pressure of 14 pounds to the square inch. These

facts account for the action of the water and it cannot be accounted for in any other way, by any law of nature.

As to the effect of pumping water out of a driven well and pumping out of a dug well, we refer this court to the testimony of the witnesses heretofore named, to-wit:

Prof. W. A. Anthony, record, page 2114.
Ives W. McGaffey, record, page 1603'
Dr. Geo. Warne, record, pages 1652–1808.
E. S. Hovey, record, page 1735.
Geo. Hovey, record, page 1627.
Dr. H. Bryant, record, page 1811.
E. A. Hovey, record, page 1754.

We also refer the court to a work on water supply, published by John Wiley & Sons, New York, 1886, entitled "Water Supply," by Wm. Ripley Nichols, Professor at the Massachusetts Institute of Technology. Commencing on page 112 and closing on page 117, the author explains how water is taken from and supplied to a driven well.

Let us examine a little the common, known laws of the pressure of fluids One is that a body of water the sixteenth part of an inch in diameter will counterbalance the pressure of a column ten or twenty or more feet in diameter. That is, if you had a reservoir of water twenty feet in diameter and fifty feet deep, with a tube one-sixteenth of an inch in diameter inserted in the side of such reservoir, near the bottom, thence extending out horizontally ten feet and perpendicularly fifty feet, so as to be level with the top of the reservoir, then when the tube is filled with water it will rise to the same height in the reservoir, and one column will exactly balance the other. If you insert a piston in the tube you could pump the reservoir dry through it, and whenever the pump stopped the water in both would retain the same level. If you put a pump in the reservoir and draw two feet of water from that, the tube would show the same height of water as that remaining in the reservoir.

Again, if you take a barrel of say the ordinary size, made water tight, and fill it with water; there will be a certain

amount of pressure at the bottom. Now insert in the head of this barrel a tube with an internal diameter of one-sixteenth of an inch and eight feet long. Fill this tnbe to the top with water and the pressure on the bottom of the barrel will be increased to the same amount as it would be if the whole barrel were built eight feet higher and filled with water. Now understand my statement; I do not say that if it is placed on the scales it would show as much weight as a barrel built up eight feet. I do say that the pressure of the particles of water upon each other, at the bottom of the barrel, would be the same as if the whole column was of that height.

As stated by Prof. Anthony, all fluids press upon themselves laterally as well as vertically. The pressure at the side is the same as at the bottom; or, in other words, taking the barrel as an illustration, with the tube eight feet high and the sixteenth part of an inch in diameter inserted in the head, the pressure outwards, at the bottom, would be the same as the pressure downwards at the same point, That is the pressure of the particles of water upon each other would be the same.

But when water is pressed upon by the air, it does not receive this lateral pressure from the air. The pressure o the air is downwards upon the whole surface of the body of water, and it is this pressure and the attraction of gravitation that keeps the surface level, and not the friction of the water on the sand or on its own particles, counterbalanced by its velocity. As shown by the testimony of Dr. Bryant, the friction depends upon the kind of soil through which the water passes and it is not equal in all kinds of soil. But the pressure of the air is equal.

This court, in the Eames case, in giving a construction to this patent, quotes from the opinion of Judge Benedict in the Carman case, as follows:

"This process involves a new idea, which was put in prac-
" tical use when the method was devised of fitting tightly in
" the earth, by the act of driving, without removing the earth
" upward, a tube open at both ends, but otherwise air tight,

"and extending down to a water-bearing stratum, to which is "attached a pump; a vacuum in the well pit and at the same "time in the water-bearing stratum of the earth, being necss- "sarily created by the operation of a pump attached to a pipe "so driven. * * * The novelty of the process "does not lie in the mechanical device for sinking the shaft "or raising the water to the surface, but in the method where- "by water, by the use of artificial power, is made to move "with increased rapidity from the earth into the shaft; whence "it results that a tube but a few inches in diameter, driven "down tightly to a water-bearing stratum of the earth, affords "an abundant supply of water to a pump attached thereto "and constitutes a practical and productive well. Such an "invention is without the field of mechanical contrivances. It "consists in the new application of a power of nature, by "which new application a new and useful result is obtained. "There is no new product, but an old product—water—is ob- "tained from the earth in a new and advantageous manner."

This, we take it, is the construction that this court puts upon this patent. That is, this court holds the patent to be for a process whereby a tube is put into the earth, down to a water-bearing stratum in the earth, and sufficiently far into such stratum to furnish a supply of water; then a pump is attached to said tube, a vacuum is created in the same, and that the pressure of the air on the water forces it into the tube in sufficient quantity to make it a practical and productive well. While this court did not, in so many words, construe the patent, yet the evident approval with which the foregoing language of Judge Benedict is cited gives assurance that such is the construction placed upon the patent by this court.

Mr. Andrews, when examined in this case, stated that if a well was dug and stoned up and a pump set in it, and then filled with gravel so that the ground was tight around the tube and above the surface of the water in the well, and the same was used as a well, it would be a utilization of the discovery by Col. Green, that the pressure of the air on the water in the ground would force it into the tube in sufficient quantity

to be a practical well; and that such a well would be, an infringement of this patent.

This shows that Judge Benedict, Wm. D. Andrews and a majority of this court concur in the construction of this patent. It is not a patent on a pump, point or tube; nor on driving the tube; nor on an air tight connection between the pump and tube. It is a patent on that quality of the atmosphere which has been demonstrated to have the power that if you put an air tight tube down to a water-bearing stratum of the earth and attach a pump to the upper end of the tube, and by operating the pump remove the air from the tube, then the air penetrates the earth to the water, and by its pressure on the water causes it to rush into the tube and it may, by operating the pump, be drawn up through the pump, and out to a vessel set to receive it.

In the first place, we say that if this is the true construction of the patent there is no law in the United States authorizing the patent. Take first the constitution on this subject. Among the powers granted to Congress is the power "to pro- " mote the progress of science and useful arts, by securing for " a limited time to authors and inventors the exclusive right " to their respective writings and discoveries." No further or other right is granted by the constitution to Congress or any one, as to patent rights. You will see at once that it does not cover special qualities in nature, or powers of nature, but simply devices by which those powers are used.

Then Congress has said in Sec. 4886, Revised Statutes: "Any person who has invented or discovered any new and " useful art, machine manufacture or composition of matter, or " any new and useful improvement thereof, * * may, " on payment of fees and other due proceedings had, obtain a " patent therefor. This the only authority given by Congress to grant patents.

It is conceded that when the constitution gives a power to Congress, it is confined to that power and to exercise only the powers granted. And when Congress confers, by its act, a power upon any department, the department cannot grant

other powers beyond what Congress gives it. In this case the Interior Department is restricted to some mechanical device, or manufactured article, or composition of matter. Special qualities of nature are not patentable.

It has long been known that the pressure of the air upon the surface of the water outside of a pump tube, would, when the air was removed from the inside of the tube, cause the water to rise in the tube about 33 feet at the sea level. This quality of the pressure of air on water was known too long to have been patented in 1861. Consequently Mr. Andrews, in this case, says that he does not claim a patent on atmospheric pressure, but that the pressure of the air is universal and presses upon the water at the rate of about 15 pounds to the square inch.

Yet this court construes this patent to be for a discovery that if a vacuum is created in a well tube, the pressure of the air on the water will force the water into that vacuum, so as to supply water for use. This is for the discovery of a quality of nature, not a composition of matter. Nitro-glycerine is a composition of matter; so is dynamite, and babbit-metal and the like. Such things have been patented, but we never yet heard of a patent on lightning, or water, or air, and this is the only one that we have heard of that is upon atmospheric pressure.

I know that those who sustain this patent will claim that it is the peculiar circumstances under which it is applied that makes it patentable. Let us now examine the circumstances. The tube must be put into the earth down to a water-bearing stratum. The earth must be packed tightly around the tube. A pump must be attached to the upper end of the tube and a vacuum created in the lower end of the tube by suction. Then the pressure of the air on the water in the ground causes the water to rush into the tube and up to the pump and, by working the pump, to go out to the vessel to receive it. Then the patent is narrowed down to the pressure of the air on water contained in a water-bearing stratum of the earth. We have shown by the testimony of many witnesses that air

penetrates the earth much more readily than water does; that it goes into all soils, and that its pressure on the water in the earth has been known as long as the fact that it presses on water on the surface or in an open well.

If this process was patentable, then in case it was anticipated by any one who gave it to the public before that time, while Green may be an original discoverer, he is not the first. The law emphatically says that he must be an original and also the first discoverer of the fact, or his patent cannot stand. In the case at bar we have proved an anticipation by a large number of witnesses, and these we have discussed in their places; but at this time we wish to call your attention to one who published the discovery to the world more than three years before Green claims to have made his first experiment. Green and Mudge say the first experiment was made in September, 1861. In 1858, in this country, was published a book entitled, or rather known as Livingstone's South Africa. On page 59 of that book is a description of how the people of South Africa procure water from apparently, a dry, sandy place in the desert. He says:

"The women tie a bunch of grass to one end of a reed "and insert it in a hole in the sand, dug as deep as the arm "can reach, then ram down the wet sand around the reed. "They then apply the mouth to the upper end of the reed "and form a vacuum in the grass beneath, in which the water "collects and in a short time rises into the mouth, and is then "passed along a straw from the mouth to the hole in the wa-"ter vessel, and thus the whole stock of water is passed "through the reed and woman's mouth, as through a pump. "When the vessels are filled they are taken home and care-"fully buried."

Here is a full and complete description of the driven well as claimed by Wm. D. Andrews, in his testimony, as laid down by Judge Benedict in the Carman case and as adopted by this court in the Eames case. The tube put down to a water bearing stratum; the earth in close contact with the outside of the tube; the pump attached to the upper end; the vacuum

created in the ground beneath; the water rushing in from the surrounding soil and passed through the tube and a pump to the vessel placed to contain the same; all this was done, and published in this country by Harper Bros. more than three years before Green claims to have thought of this invention.

This we say is an exact description of the driven well, as claimed by the three great authorities, as to what this patent is and is claimed to be. With such a description, the court must say that there is an anticipation of what Green claims to have invented. It must be remembered that Andrews does not claim a patent on the point, the tube or the attachment of the pump to the tube. He only claims on the process of obtaining water by the pressure of the air on water under the earth. This court held, in the Eames case, that the connection of the pump to the tube must be air tight, as a necessity, and that such connection was a part of the common knowledge in the art.

Our patent law, Sec. 4886, says that under such circumstances a patent shall not be granted, or if granted it shall be defeated by proof of such publication in this country. (Revised Statutes, 4920, it. 3rd.)

ABANDONMENT.

On reading over our argument on abandonment we see that there is one point to which we have neglected to call the court's attention. That is to the pipe, pump and tools that Col. Green says he had prepared to take into the army. These were prepared by and in the care and control of Lieut. Mudge, who was to use them, under Green's direction. Green never looked after them, did not keep them a secret, told people about them and what they were for, and in the fall of 1862 allowed them to be sold to J. C. Pomeroy, and allowed them to be used in making a well for him. Green nowhere denies that he knew of this use of the very apparatus that he had prepared to use in the army.

THE STATE OF THE ART.

We wish to have this court consider the state of the art of making wells in 1861, as shown by the testimony in this case, taking

The article on Boring Wells, R. page 1570,
The article on Earth Borer, R. page 1571,
Borer in Rural Economy, (Reese Cyclopedia,) R. p. 1616,
Spring Draining Pump, " " R. p. 1617,
Well in Rural Economy, " " R. p. 1617,
To Raise Water in all Situations, (McKenzie's 5000 Receipts,) R. page 1618,

and the general knowledge, as stated by this court in the Eames case, that in order to pump water it was necessary to have the tube air tight from the pump to the water, and that the pump must be attached to the tube by an air tight concection, and it will be seen that the art of making small wells and putting small pump tubes down them, and having the earth packed around the outer tube, was well developed and understood in 1861, and that the sphere of invention in that line was very limited.

If, in addition to this the court will consider the testimony of J. J. Hunt, R. page 1599, as to the way Jacob Englefried made wells at Napierville, Ill in 1848 to 1853; and the testimony of E. W. Purdy, R. page 1787, as to the manner in which he and A. J. Luckey made wells in Milwaukee, Wis. in 1849 and 1850, it will appear that there was nothing to invent at the time Green claims to have made the discovery that the air would press on water in the earth and force it into a tube from which the air had been withdrawn by a pump.

Prof. Anthony and Ives W. McGaffey dispose of the idea that the knowledge of air penetrating the earth to the water was new in 1861. The knowledge that air penetrates any porous substance, as earth, brick, unglazed earthen ware and all like substances, more readily than water does is very ancient.

AS TO WELLS MADE BY THE HOVEY PATENT.

The court is requested to notice that, in making wells, Hovey not only bored down with a three inch auger and took out all the earth to the water-bearing stratum, but that with his tube, first mentioned in his patent, inserted, he removed the earth in the water-bearing stratum, leaving nothing but coarse gravel in contact with the tube. This gravel was also left in a loose condition about the tube, so water would flow through it freely. (Testimony of Geo. Hovey, R. pp. 76, 81, 85.) If water could flow through this gravel, air would do so as soon as the water was removed.

Then we say that by making the kind of well described by Geo. Hovey in his testimony, and cleaning out the sand in the water-bearing stratum of the earth, as stated in Hovey's patent, No. 123.903, the defendant does not infringe Green's re-issued patent, No. 4.372. Then we say that the judgment and decree of the Circuit Court must be affirmed.

LAKE & HARMON,
Solicitors for Respondents.

JED LAKE, *Counsel.*

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123-264

Supreme Court of the United States.

OCTOBER TERM, 1887.

No. 16.

WILLIAM D. ANDREWS, GEO. H. ANDREWS, NELSON W. GREEN *et al.*, APPELLANTS,

vs.

GEO. HOVEY, APPELLEE.

Appeal from the Circuit Court of the United States for the Southern District of Iowa.

DRIVEN WELL CASE.

ADDITIONAL BRIEF BY APPELLEE.

JED LAKE, M. W. HARMON, Counsel for Appellee.

JUDD & DETWEILER, PRINTERS.

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JED LAKE, M. W. HARMON, Counsel for Appellee.

In looking over the brief of appellants in this case we have deemed it our duty to file an additional brief for appellee.

The Court should not consider the decision in Eames *vs.* Andrews *et al.*, decided at the last term, in deciding this case.

In April, 1886, the appellee in the case filed a motion to have the Hovey case and the Corn case heard with the Eames case setting out the fact that the three cases were for an infringement of the same patent.

This motion was resisted by the appellants, who stated, in substance, that the issues and evidence in the Hovey and Corn cases were entirely different than in the Eames case.

Hon. Geo. F. Edmonds appeared and opposed the motion.

This Court refused the motion, stating that the parties have a right to have each case heard upon its own merits.

If the decision of the Court in the Eames case is to prevent this Court from considering our evidence and authorities on the question of what the original invention was and what is covered by the reissue, then a great injustice will be done the appellee in this case.

In the Eames case this Court says that there is no proof to contradict or vary the testimony of the expert who testified in that case.

In this case there is no testimony like that quoted in the Eames case; and we have an abundance of testimony to show that the statements of the scientific expert in the Eames case is not true.

Dr. H. Bryant, Record, page 1810, Q. 8 to 13.
Ives W. McGaffey, Record, page 1606, Q. 12 to 34.
Prof. Wm. A. Anthony, Record, p. 2115, Q. 5 to 11.

We also have the practical test as testified to by—

Dr. Geo. Wărne, Record, page 1653, Q. 16 to 30.
And E. S. Hovey, Record, page 1735, Q. 72 to 75.
And George Hovey, Record, page 1627, Q. 60 to 77.

THE INDEPENDENCE WELL.

The counsel for appellants devotes over one hundred pages of his brief to an abstract of the testimony in the well made at Independence, Iowa, in 1861.

The principal object seems to be to show the difference as to the surroundings of that well as seen by different witnesses.

We do not pretend nor do the witnesses say that they all saw that well on the same day. Months of time intervened. Some saw it in dry weather, when the ground around it was dry; others after a rain storm, when the ground was wet; others after it had been used a good deal and it was wet on the surface; some while there was yet grass near it, and another after it had been used so much that there was no grass there.

Each of these little differences is picked out by the appellants in their brief and made much of.

We claim that certain facts are proved beyond question.

That the well was put down in 1861—about the last of April or first of May.

C. T. Kimball, Record, page 1833.
Thos. Sherwood, Record, page 1678.
Rachel Kimball, Record, page 1831.
Henrietta Sherwood, Record, page, —.
J. E. Trexler, Record, page 1492.

That the well was there and used until the 11th or 12th of July, 1861.

John A. Davis, Record, page 1700.
Almon J. Francis, Record, page 1705.

S. S. Allen, Record, page 1803.
E. S. Hovey, Record, page 1571.
Geo. Hovey, Record, page 1629.
Martin Rust, Record, page 1489.
S. W. Fentenmaker, Record, page 1485.
J. E. Trexler, Record, page 1724.
Josiah Brace, Record, page 1895.

That it was there during the celebration, on the 4th day of July, 1861.

Orlando Cobb, Record, page 1594.
James H. Blakly, Record, page 1590.
Mrs. Emeline Parker, Record, page 1863.

That the well was made by driving a tube into the ground with a maul and attaching a pump to the top of the tube and pumping water.

Dr. Geo. Warne, Record, page 1652.
C. T. Kimball, Record, page 1833.
J. H. Tyson, Record, page 1710.
S. P. McEwen, Record, page 1764.
A. F. Williams, Record, page 1707.
John H. Campbell, Record, page 1822.
J. E. Trexler, Record, page 1725.
S. S. Allen, Record, page 1803.
A. Hagaman, Record, page 1575.
S. L. Stroman, Record, page 1909.

These parties are in addition to those who saw the well pumped water at it, and saw others pump, and know gener,

ally that this well was there the first year of the War of the Rebellion.

As to the affidavits of C. T. Kimball, the applellants make a great many statements as to the two affidavits that C. T. Kimball signed.

One in December 30, 1878, the other on May 24, 1879.

One at the instance of appellee, the other at the instance of appellant.

This first affidavit was taken and used in the motion for a temporary injunction, which was heard before Judge Love about the 1st of February, 1879.

The appellants after that sent John R. Royce to try and get from Kimball something to throw doubt on this first well. Kimball testifies that he told Royce all about the first well and the second well, and that Royce drew up an affidavit, in which he described the first well with the dates of the second well.

This Kimball refused to sign.

It was destroyed and another affidavit drawn, which Kimball did sign.

Testimony of C. T. Kimball, Record, page 1730.

Kimball says that Royce told him that the appellants wanted this second affidavit to throw some doubt into the mind of the Court as to the time of the putting down of the first well in 1861.

We ask the Court to read the record as to the evidence of the witnesses to this well at Independence, Iowa, made in the spring of 1861, and lasting until in September of that year.

We ask the Court to notice that a number of these wit-

nesses who saw the well in 1861 also saw the well made by Charles Brown, Chamberlain, and West in 1866, when they sold the right to the county of Buchanan, to Hustis, and the right of Minnesota to Joseph Chandler and J. B. Turner; and some saw the well made by E. S. Hovey, in 1868, that was put down to get water in building the Presbyterian church.

Such witnesses cannot be mistaken. They saw the three wells, and are able to produce documentary evidence as to the time the first well was made.

We ask the Court to notice particularly that the witnesses to the first well made at Independence, Iowa, do not fix the date from recollection merely. They fix it from events. These events are capable of being fixed as to date by documents executed, printed, and known to have happened at the time.

Certain witnesses—C. T. Kimball, T. Sherwood, H. Sherwood, and R. Kimball—by the time that Kimball and Sherwood dissolved partnership in keeping the hotel known at different times as Revere House, White House, Merchants' Hotel. That date is fixed by the receipt and other papers the last of April, 1861.

The above-named witnesses and S. P. McEwen fix the time as the next spring after Jed Lake was married. The certificate of Rev. J. Fulton says that was the 1st of January, 1861.

Other witnesses—S. S. Allen, Perry Munson, Geo. Mann, A. Hagaman, O. Marquette, S. M. Marquette, J. Brace, J. E. Trexler, J. H. Campbell, and others fix it at the time cricket ball was played on the grounds near there.

This club was broken up when A. B. Lewis, C. L. White, Tom Blonden, and W. S. Marshall and R. Whait went away in Captain Lee's Company E, 5th Iowa Infantry, which is shown to have been the 11th day of July, 1861, and it is shown that no cricket ball has been played on that ground since that time.

Other witnesses—J. A. Davis, A. J. Francis, E. S. Hovey, M. Rust, George Hovey, B. C. Hale, W. H. H. Morse, A. H. Fonda, J. Brace, and a large number of others, fix the time as being while Captain Lee's company was drilling there and while Captain Hoard's Company C, 9th Iowa Infantry, was there, and the last of these companies is shown to have left there in September, 1861.

E. Ross fixes the date from the time he bought the lot on which he built a house that summer; that deed is dated April 20th, 1861.

Jacob Rich fixes the date as being before Mrs. Jordan bought the lot of Hagaman.

That deed is dated September 16th, 1862. Rich and Hagaman both say it was the year before that deed was made.

Racheal Kimball also fixes the date from the date of the birth of her daughter. This occurred a few days after they moved out of the White House and was in May, 1861.

An examination of these documents, printed in the Record on pages 2153 to 2157, shows that here is a large amount of documentary evidence that cannot be impeached or varied as to its date, and no attempt has been made to contradict it.

These witnesses cannot be mistaken in the date.

None of these documents were in the Cross case, as this Court can readily see by reading the opinion of Mr. Justice

Blatchford, in which he carefully sets out all the evidence in that case.

We also ask this Court to notice that in the evidence as to the well made by Chamberlain, Brown, Harrington, and West, in 1866, there is no pretence that any soldiers were there drilling for the war—that there was any cricket ball played there at that time.

That Brown's house, then occupied by Deering, got afire, and they carried water from this well to put it out.

It is not claimed that this well in 1866 was there on the 4th day of July. Brown says it was taken up before that and put down either fifteen miles north of Independence, or was taken to Vinton and put down in the court-house yard there. He says he put a well down at Vinton on the 2d or 3d day of July, 1866.

H. S. Cole, who knew Brown in Wyoming county, New York, and who helped Brown at Independence, says that this well was taken up either July 1st or 2d, and was put down at Vinton July 3d, 1866, and that he was in Independence July 4, 1866, and no such well was there on that day or any time thereafter.

This proves that our witnesses are not mistaken as to the two wells—one in 1861 and one in 1866—having, to outward appearances, a common resemblance.

AS TO THE WELLS AT CORTLAND, NEW YORK.

We wish to call the attention of the Court more particularly to the making of the well, at Cortland, New York.

Colonel Green testifies (Record, page 559), that he detailed

Lieutenant Mudge to make experiments and named certain men who would assist him.

He says that he, Green, did not stay at the place where experiments were made, but left the conducting of them wholly to Byron Mudge. (Record, page 562.)

Colonel Green says that he described to the men composing his drill squad the way to make wells.

These men were Byron Mudge, J. C. Carmichael, H. F. Robinson, A. P. Smith, A. J. Todd, Dr. Hyatt, Charles M. Newcomb (Record, page 560), and Mudge reported to him the result of his experiments, and they caused him, Green, to believe that the plan of making a well was a success.

Then he gave orders to Byron Mudge to procure material to take along with the regiment so that they could make this kind of well in the field. (Record, page 570.)

The material was procured and ready to be taken into the army, and Adjutant Robinson was ordered to furnish transportation for the material to make these wells. (Record, page 570.)

He knew that Mudge put down the well in the cook-house for Julius A. Graham, and that it worked successfully, and was used by Graham to furnish water to cook with, wash dishes, drink, &c.

If to this we add the testimony of Byron Mudge (Record, page 1851) that he made the experiment at Green's house, one at or near the mill on his brother's place, and at Mr. Townley's, one at Reed Peck's, and that these were made before the well was made on the fair grounds for Julius A. Graham, we see that the process had passed beyond the region of experiment.

It had been fully demonstrated and proved successful.

That Green knew of these experiments is proved by Mudge, who was acting under Green's orders and in his interest and within the scope of his orders, as stated by Col. Green and acknowledged by Mudge, and Mudge reported to Green as to his success. (Record, page 1853.)

Then, after this material had been prepared, by Colonel Green's orders, to be taken to the field with the regiment, it was used in making a well for J. C. Pomeroy, in 1862, and Green does not anywhere show that he ever looked after this material or claimed it or forbade its use by Pomeroy or directed the fact to be kept a secret.

It is also shown by Green and Barnard, witnesses for complainants, that Green described this process fully in September, 1861, to Barnard, Crandell, Rev. Meecham and wife, and Mr. Brown and wife, and to many others, so fully that Mr. Barnard, in 1862 and 1863, made for himself two wells of that kind, and that from 1862 to 1867 Green was a constant visitor at Barnard's house, where one of these wells were in constant use.

This certainly brings the question of Green's knowledge to the public use of this well home to him as fully as Barnes had knowledge of the use of the corset-stays in Egbert *vs.* Lippman, 104 U. S., p. 333.

In Egbert *vs.* Lippman, Justice Blatchford, who tried the case at circuit, said:

"The policy introduced by the act of 1839, and thus continued, is that the inventor must apply for his patent within two years after his invention is in such a condition that he can apply for a patent for it, and that if he does not apply within such time, but applies after the expiration of such

time and obtains a patent, and it appears that his invention was in public use at a time more than two years earlier than the date of his application, his patent will be void, even though such public use was without his knowledge, consent, or allowance; and even though he was, in fact, the original and first inventor of the thing patented, and so in public use. Such public use for such a length of time is made equivalent to absolute abandonment."

The decision in that case was sustained by this Court on an appeal and trial *de novo*.

Pinson *vs.* Eagle Screw Co., 3 Story, 402, on p. 407.

This court held that a sale or public use by the inventor—that is, if he use it in public, so that the public know it—such use invalidates his patent.

Pitts *vs.* Hall, 2d Blatchford, p. 229.

Held, that a public use or a sale of a completed machine would forfeit a patent obtained more than two years after such use or sale. We also call the Court's attention to the opinion of Judges Shiras and Love in this case, as published in the record, pages 35 to 54.

The separate opinion of Judge Love treats especially of the use for more than two years before the patent is applied for. (Record, page 48.)

PRINTED PUBLICATIONS.

The description given of the driven wells made in South Africa by the Bokalahari, as published in Livingston's book, 1858, and set out in the Record, page 1619, describes all the

material parts of the invention as now claimed by William D. Andrews in his evidence.

Record, page 237, and cross-examination, p. 243, and by Nelson W. Green in his evidence, Record, page 573, and as testified to by Thomas C. Theaker, the expert used by the complainants in this case, Record, page 253.

These witnesses say that this patent does not cover the tube or the driving of it merely, nor the pump or the air-tight connection, but covers the compacting of the earth about the tube and the forming of a vacuum in the tube and earth at its lower end, and the pressure of the air on the water forcing it into the tube.

These are all described fully in this book which was published in 1858 by Harper Bros., of New York.

In Loom Co. *vs.* Higgins, 105 U. S., page 580, this Court held: That when the specifications of a patent were sufficiently clear to enable one skilled in the business or art to which the subject of the invention belonged to make the machine, article, or composition, or execute the process, it was a sufficient compliance with the requirements of the law, and such specifications could be infringed by a machine, composition, or process that secured the same results in substantially the same way.

In Downton *vs.* Yeager Milling Co., 108 U. S., page 466, this Court held: That where the material parts of an invention had been previously described in a printed publication, if the description was such that the matter could be understood by those skilled in the art to which the invention belonged, it was a sufficient publication to invalidate a patent

subsequently obtained producing the same results in substantially the same way.

We say that this description is sufficient to fully cover all that is contained in the reissued patent in suit.

Penn. R. R. Co. *vs.* Locomotive Truck Co., 110 U. S., page 490. This Court held that when substantially the same results were produced by an old device and no new result substantially distinct in its nature was produced a patent could not be maintained.

We say that we have shown in this case that this patent does not produce any substantially new results nor is there any new device.

By consent of the parties in this case all immaterial and irrelevant matter has been left out of the record. Though the record is quite long, yet we ask this Court to examine the same.

On such examination we believe this Court must sustain the judgment of the circuit court.

JED LAKE,
M. W. HARMON,
Solicitors and Counsel for Appellee.

125-267 86 Sup 28

Supreme Court of the United States.

OCTOBER TERM, 1887.

No. 16.

WILLIAM D. ANDREWS, *et al.*, APPELLANTS,

vs.

GEO. HOVEY, APPELLEE.

Appeal from the United States Circuit Court for the Southern District of Iowa.

MOTIONS.

Now comes George Hovey, the appellee in the above-entitled cause, and moves the Court to allow him a judgment against the appellants for the sum of three hundred dollars, and for cause states:

That this case would have been reached on the regular call of the docket of this Court early in April, 1887.

That he was here by his counselor with a brief in the case and ready to ask this Court to open the record and affirm the judgment of the court below because the appellants had not printed the record.

That a day or two before the case would have been reached in regular order the appellants filed a motion for a continuance of the case and for more time to print the record and to advance the case of Andrews *et al. vs.* Cone then pending on the same patent and with the same issues and substantially the same proof.

When this motion was served on the counsel for appellee he stated that the motion should be granted on terms if at all, and they said, and the counsel for appellants agreed, that such would be right, and three hundred dollars was finally fixed as the amount.

When the motion was presented to this Court counsel for appellants state the fact as to terms, and that counsel for appellee thought the amount ought to be three hundred dollars; that the appellants would not say that such a sum was unreasonable, but left it to the Court.

When the Court made an order granting the continuance the Chief Justice said that the appellant need not take any further steps towards printing the record in this case until the further order of this Court, and that the allowance of pay to appellee would await the further order of this Court.

When the order was written out no reference was made to the terms to be imposed. And when this Court made the order to print the record the matter of compensation for the trouble and expense appellee had been to in the case was not acted upon by the Court.

Appellee now asks that the allowance be made, as he was put to a large amount of expense that was rendered nugatory by reason of the neglect of the appellant to print the record at the time he ought to have printed it.

SECOND MOTION.

Now comes the appellee in the above-entitled cause and moves this Court to affirm the judgment of the circuit court in this case, and for reasons states—

First. That the record should have been printed in this case at the last term of this court.

Second. That on granting a continuance in this case and the case of Andrews *et al. vs.* Cone the Court ordered that the record should be printed by the first day of August, 1887, by appellant.

Third. The appellant did not put up the money to print the record until after August 1st, 1887, and the record was not printed until the 1st day of September, 1887, thus depriving this appellant of thirty days in which to prepare for trial.

For the above reasons the appellee asks that the appeal be dismissed or that the judgment of the circuit court be affirmed.

JED LAKE,
Counsel for Appellee.